

# **The Marin Countywide Plan**

## **Community Development Element Technical Report #3 Alternative Scenarios and Evaluation**



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The following information is provided for your reference:

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8. The eighth section provides information on the contact details for the relevant departments.

9. The ninth section discusses the importance of maintaining a safe and secure environment.

10. The tenth section outlines the process for handling complaints and feedback.

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12. The twelfth section describes the process for managing risks and hazards.

13. The thirteenth section provides information on the roles and responsibilities of the management team.

14. The fourteenth section discusses the importance of maintaining a high level of service.

15. The fifteenth section outlines the process for reviewing and improving the overall performance.

16. The sixteenth section provides information on the contact details for the relevant departments.

17. The seventeenth section discusses the importance of maintaining a safe and secure environment.

18. The eighteenth section outlines the process for handling complaints and feedback.

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99. The ninety-ninth section details the requirements for data protection and privacy.

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COMMUNITY DEVELOPMENT ELEMENT  
TECHNICAL REPORT #3  
LAND USE ALTERNATIVES FOR MARIN COUNTY

**1.0 EXECUTIVE SUMMARY**

The 1990 Countywide Plan Land Use Alternatives Report examines different ways that the unincorporated county and the cities of Marin could ultimately develop. This report considers how different future growth patterns would affect life in the county including land uses, transportation, the environment, and public services.

The Land Use Alternatives Report presents six different land use alternatives, any one of which could provide information for the draft Community Development Element of the Marin Countywide Plan. The six alternatives modify commercial square footage, housing, population, and jobs by changing the amount of potential development on individual parcels of land. The land use alternatives have been tested against the transportation system described in the Marin Sales Tax Expenditure Plan. The principal transportation improvements include light rail transit along the Northwestern Pacific right-of-way and High Occupancy Vehicle lanes on Highway 101.

**1.1 DESCRIPTION OF LAND USE ALTERNATIVES**

**1.1.1 The Local Policy Alternative** includes the level of housing and job growth allowed under the adopted general plans and zoning laws in the unincorporated areas and the cities of Marin. The Local Policy Alternative would increase population by 20% and jobs by 70% over 1987 levels. This alternative examines the impact of current general plan policies on freeway traffic and the balance of jobs and housing in the county.

**1.1.2 The Constrained Water/Sewer Capacity Alternative** reduces development potential throughout Marin to reflect current water and sewer capacity constraints. The alternative assumes that water and sewer systems will not be expanded beyond already funded improvements. Development potential was reduced by 85% in Southern, Central, and portions of West Marin to reflect the current water shortage in the Marin Municipal Water District (MMWD) and the limits of the Las Gallinas Valley Sanitary District. This is an estimate of the amount of development that could occur beyond 1987 levels given known water capacity and does not reflect actual pipeline extension agreements or building permits. In the Novato area, served by the North Marin Water District, water and sewer capacity requires only a 2% cut in potential development below that envisioned in the Local Policy Alternative with the exception of development on the Hamilton site, which is served by MMWD and has been reduced by 85%. Water capacity in Bolinas does not allow for any additional development. This alternative tests the impact of continued North County growth along with decreased South County growth on freeway traffic, housing, and jobs.





**1.1.3 The Increased Housing Alternative** shifts to housing 70% of the potential commercial development envisioned in the Local Policy Alternative. The alternative assumes that 1,000 square feet of potential commercial space could be converted to one housing unit. The Housing Alternative increases housing opportunities by 40% and increases future job growth by 32% over the 1987 conditions. This alternative considers whether an increased commitment to housing would ease traffic or housing problems in the county.

**1.1.4 The Pedestrian Pocket (Transit-Oriented Development) Alternative** offers a change from the low density development that has characterized recent growth in Marin. The alternative creates communities concentrated around a transit stop and surrounded by open space. The alternative increases development in selected areas identified as "Pedestrian Pockets" and correspondingly reduces development in nearby areas. The pocket sites are located in Downtown Novato, Hamilton Field, and St. Vincent's/Silveira within 1/4 mile of proposed transit stops along the Northwestern Pacific right-of-way. The total volume of development is identical to that of the Local Policy Alternative. The Pocket Alternative tests how increased development densities around transit lines might increase transit ridership and ease freeway congestion.

**1.1.5 The Public Acquisition Alternative** eliminates the future development potential of a number of large tracts of land in the City-Centered Corridor through public purchases of land or development rights. These land areas include St. Vincent's/Silveira, Hamilton, and the developable lands north of Novato including the Gness Field area. This Alternative would allow a 15% growth in population and a 50% growth in jobs over 1987 conditions. This alternative examines whether a reduction in development on specific sites would eliminate the need for major public expenditures on transportation improvements.

**1.1.6 The Reduced Jobs Alternative** would reduce future commercial development by 50% below levels in the Local Policy Alternative for the Novato and San Rafael planning areas. This Alternative tests whether slowing down job growth in the northern county would reduce traffic congestion on Highway 101.





## **1.2 LAND USE ALTERNATIVES: SUMMARY OF SIGNIFICANT IMPACTS**

The land use alternatives would significantly impact transportation, jobs/housing balance, population, design and community facilities. The impacts of the alternatives are summarized in the attached tables and figures. Table 1 shows levels of housing and population growth. Table 2 indicates potential increases in commercial space and jobs. Figure 1 graphically depicts different levels of job and population growth under the alternatives. Figure 2 summarizes the relative significance of the potential impacts of each alternative.

### **Transportation**

The impacts of the all the alternatives on the existing transportation system would result in a volume of traffic on Highway 101 that greatly exceeds the available capacity. All the alternatives tested would require improvements proposed in the Sales Tax Transportation Plan in order to provide levels of service on Highway 101 equal to or better than those existing in 1990. The Constrained Capacity Alternative would generate the lowest number of trips and the Local Policy Alternative the highest.

Levels of Service F would occur along 101 under each of the Land Use Alternatives without roadway and transit improvements. The improvements in the Marin Sales Tax expenditure plan would boost freeway performance to Levels of Service ranging from B to D at selected locations (if McInnis Parkway were built).

### **Jobs/Housing Balance**

The county would not achieve an exact balance of jobs to population under any of the alternatives. The Increased Housing Alternative would provide the best jobs/housing balance. The Local Policy Alternative creates the worst imbalance of jobs to housing. Imbalances which favor new jobs over new housing units would result in potentially severe shortages of Marin workers to fill Marin jobs. The potential labor shortage would range from 45 000 workers under the Local Policy Alternative to 1,200 workers under the Housing Alternative.

### **Population Profile**

The alternatives result in different levels of population growth, from a 30% increase in population under the Housing Alternative to a 6.3% growth in population under the Constrained Capacity Alternative. These differences might affect the demographic profile of the Marin population. The Housing Alternative would result in the most diverse population, with potentially the greatest number of young persons, families, seniors, and children. The Constrained Capacity Alternative would severely restrict future population growth. This alternative may make it difficult for young people, seniors, and families with children to remain in Marin.

### **Design**

The alternatives would significantly affect building design and integration into the surrounding community. The alternatives would noticeably alter the future design of large undeveloped sites in the county. The Local Policy, Constrained Capacity, and Reduced Jobs alternatives may result in development on large vacant sites which would replace natural areas with private homes and commercial buildings resembling recently built residential and commercial projects. The





Pedestrian Pocket Alternative would more tightly cluster developments than the above-mentioned alternatives, resulting in larger structures, surrounded by a greater amount of open space. The Public Acquisition Alternative would leave a number of large sites entirely as open space.

#### **Fiscal Impacts and Community Facilities**

The alternatives would require new facilities and services such that the costs of new development would exceed anticipated revenues. In addition to needed operating revenues for local government services, the alternatives would require the expansion of roadways, sewer systems, and water supplies. The Constrained Capacity Alternative, which assumes no supplemental water supplies, would cost the county an additional \$468 million dollars. The highest cost alternatives would be the Local Policy and Pedestrian Pocket Alternatives at \$558 million each.









TABLE 1

## SUMMARY OF ALTERNATIVES: HOUSING AND POPULATION

Land Use Alternative	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change
1. Local Policy	96,342	123,692	28.4%	223,774	268,557	20.0%
2. Constrained Capacity	96,342	108,661	12.8%	223,774	237,864	6.3%
3. Increased Housing	96,342	134,235	39.3%	223,774	292,236	30.6%
4. Pedestrian Pockets	96,342	123,692	28.4%	223,774	268,557	20.0%
5. Public Acquisition	96,342	119,308	23.8%	223,774	258,947	15.7%
6. Reduced Jobs	96,342	123,692	28.4%	223,774	268,557	20.0%

Source: Marin County Planning Department, 1990

TABLE 2

## SUMMARY OF ALTERNATIVES: COMMERCIAL SQUARE FOOTAGE AND JOBS

Land Use Alternative	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change
1. Local Policy	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
2. Constrained Capacity	24,939,890	36,838,757	47.7%	88,214	125,179	41.3%
3. Increased Housing	24,939,890	33,096,989	32.7%	88,214	116,063	31.6%
4. Pedestrian Pockets	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
5. Public Acquisition	24,939,890	39,442,090	58.1%	88,214	133,780	51.7%
6. Reduced Jobs	24,939,890	37,477,292	50.3%	88,214	129,072	46.3%

Source: Marin County Planning Department, 1990





FIGURE 1

## Countywide Plan Alternatives SUMMARY

Alt 1 = Local Policy

Alt 4 = Pedestrian Pockets

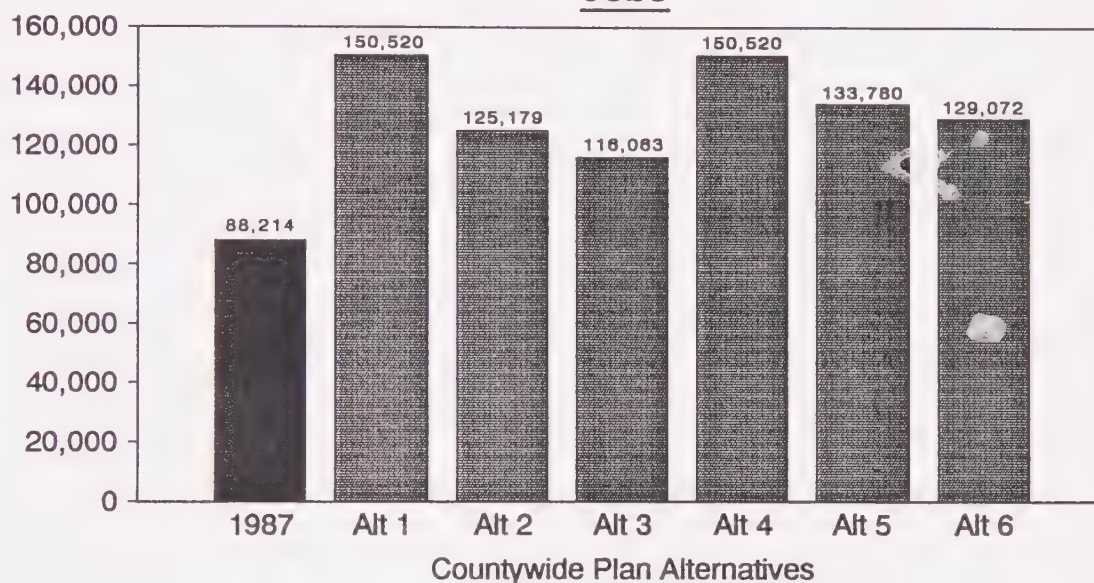
Alt 2 = Constrained Capacity

Alt 5 = Public Acquisition

Alt 3 = Housing Alternative

Alt 6 = Reduced Jobs

### Jobs



### Population

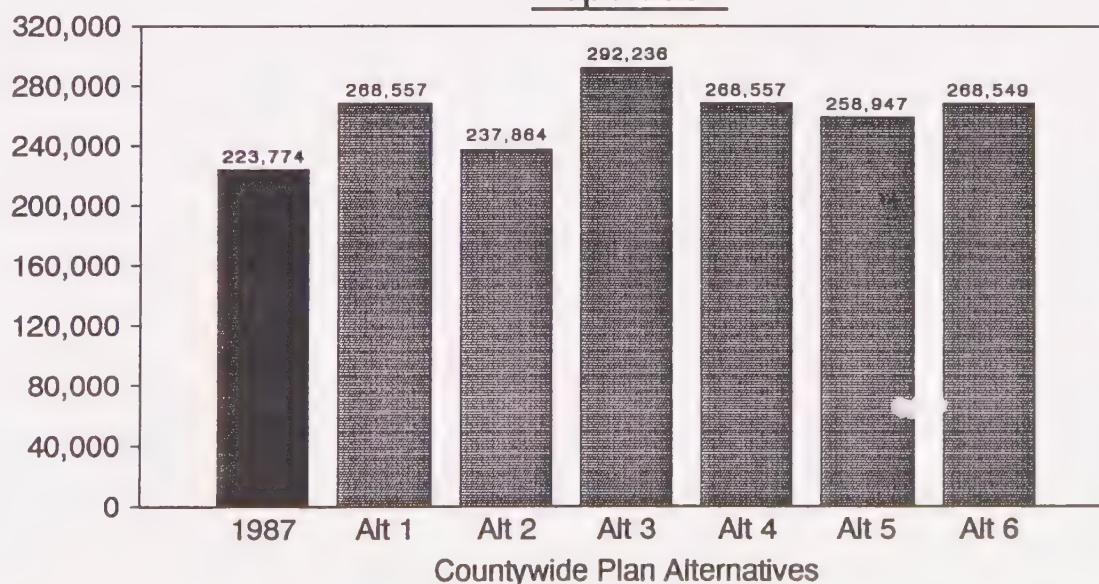






FIGURE 2

## LAND USE ALTERNATIVES SUMMARY OF IMPACTS

	Local Policy	Constrained Capacity	Increased Housing	Pedestrian Pocket	Public Acquisition	Reduced Jobs
<i>Community Development Impacts</i>						
Design	●	●	●	○	○	●
Jobs	○	●	●	○	●	●
Population	○	●	○	○	●	○
Job/Hsg. Balance	○	●	○	○	●	●
Fiscal	○	○	○	○	○	○
<i>Transportation Impacts</i>						
	○	○	○	○	○	○
<i>Environmental Quality Impacts</i>						
Air Quality	○	○	○	○	○	○
Resource Use	○	○	○	○	○	○
Water Quality	○	○	○	○	○	○
Views	○	○	○	○	○	○
Biolog.Resources	○	○	○	○	○	○
Ag./Open Space	○	○	○	○	○	○
<i>Housing Impacts</i>						
	○	○	○	○	○	○
<i>Noise Impacts</i>						
	○	○	○	○	○	○
<i>Hazards Impacts</i>						
	○	○	○	○	○	○
<i>Trails Impacts</i>						
	○	○	○	○	○	○
<i>Community Facilities Impacts</i>						
Sanitary	○	○	○	○	○	○
Water	○	○	○	○	○	○
Schools	○	○	○	○	○	○
Public Safety	○	○	○	○	○	○
<i>Parks Impacts</i>						
	○	○	○	○	○	○

## Legend:

- = High Likelihood for Significant Adverse Impact
- = Moderate Likelihood for Significant Adverse Impact
- = Little Likelihood for Significant Adverse Impact

Source: Marin County Planning Department, 1990



## 2.0 PURPOSE AND OVERVIEW

### 2.1 PURPOSE

The purpose of the Countywide Plan Land Use Alternatives Report is to describe alternative assumptions about future growth and development and their relative impacts on the environment, transportation system, public services, and government budgets. The analysis of alternatives in this report provides the basis for the Marin community, the County Planning Commission and the Board of Supervisors to identify a preferred alternative. The preferred alternative will provide direction for drafting the Community Development and Transportation Elements of the Countywide Plan.

The Land Use Alternatives in this report vary levels of development throughout the county to show the cumulative effects of development on population, jobs, and traffic. Although the land use designations in the Countywide Plan are legally binding only in the unincorporated county, the report varies development levels in cities since most development will occur within cities. Examining development in all the jurisdictions of the county allows the Countywide Plan to provide policies and data which can help shape a common direction for plans affecting the entire county. Implementing any of these alternatives would require coordinated action from cities, towns and the County of Marin.

### 2.2 OVERVIEW

In order to explore possible futures for Marin, County Planners developed six land use alternatives. These alternatives are compared to levels of development in the county as of 1987. While the 1987 base year for this report does not reflect 1989 conditions, the figures do permit a meaningful comparison of impacts from different future land use patterns. A future report on the impacts of a preferred alternative will use more current land use information for the base year. The comparison of each alternative against 1987 conditions is located in Section 3.0 of this report, Alternatives Evaluation. County planners evaluated the land use alternatives by examining their impact on environmental quality, community development, transportation, housing, environmental hazards, trails, community facilities, and parks.

The alternatives provide an estimate of population and jobs at full development (or buildout) under various assumptions, but ***do not suggest a date by when all development is expected to occur***. Determining the market demand for space and the timing of development requires complex and highly speculative assumptions which were not prepared by County staff for this report. The Association of Bay Area Governments (ABAG) provides projections of development which offer some idea of how quickly the county might develop. All estimates of development timing contained in this report were derived from ABAG figures.





### **3.0 ALTERNATIVES EVALUATION**

The following section evaluates the impact of the land use alternatives on community development, transportation, environmental quality, housing, community facilities, environmental hazards, and parks.

#### **3.1 COMMUNITY DEVELOPMENT IMPACTS**

##### **3.1.1 Community Design**

The effect of new structures on the surrounding community differs among the alternatives. Additional development of residential and commercial uses could alter the character and appearance of developed areas as infill occurs and major vacant sites are developed.

Unless carefully sited and designed, infill development could alter the overall design characteristics of these communities. The alternatives affect community design primarily on large vacant sites. Large sites where development differs among the alternatives include St. Vincent's/Silveira, Hamilton, Bel Marin Keys, Downtown Novato, and the North Novato area. The attached set of maps indicate how the land use alternatives would vary the location and type of development on major undeveloped parcels (Figures 3 - 7).

The Local Policy Alternative would allow development on each of the large sites according to existing general plans. On the St. Vincent's/Silveira site, low-density residential development with a commercial area would cover most of the area west of the railroad line. This development pattern would resemble other low-density single family residential subdivisions where individual home sites are large and much of the land area is reserved for private use. On the Hamilton site, the Local Policy Alternative would allow mixed use development near the proposed rail stop indicated as "mixed-use development" in Figure 3. On the Bel Marin Keys site, the Local Policy Alternative would allow the development of only a small land area shown as "developable, no major constraints." There are major constraints on much of the Bel Marin Keys site because of agricultural production, flood hazards, and wetlands. The North Novato area would include agricultural uses, mixed commercial/industrial development areas, and residential development areas as shown on Figure 7.

The Pedestrian Pockets Alternative would concentrate development onto three pocket sites. This design style most closely resembles that of older parts of the county where development was centered around a rail line. Land not devoted to development would be reserved as open space or agricultural land. At St. Vincent's/Silveira, three and four story buildings would offer housing and employment within a quarter mile walking distance of a transit stop. At Hamilton, the Pocket Alternative would concentrate the development close to the rail line, leaving large areas undeveloped. In downtown Novato, the Pocket Alternative would reduce allowable development surrounding the downtown and concentrate it near the transit line to promote the use of transit and walking. This might result in more three to four story buildings in the downtown Novato area, with fewer or smaller buildings outside the pocket site. The Pocket Alternative would not affect the Bel Marin Keys or the North Novato areas.





The Public Acquisition Alternative would eliminate development at St. Vincent's/Silveira, Hamilton AFB, Bel Marin Keys, and North Novato. The community design impact would be negligible, since the alternative retains the natural appearance of the site.

The Pedestrian Pocket Alternative is the only alternative which is consistent with existing community design policies of the Countywide Plan. These policies encourage mixed use development at higher densities along transit lines. If the preferred alternative does not identify any sites for transit-oriented development, Countywide Plan policies would have to be changed.

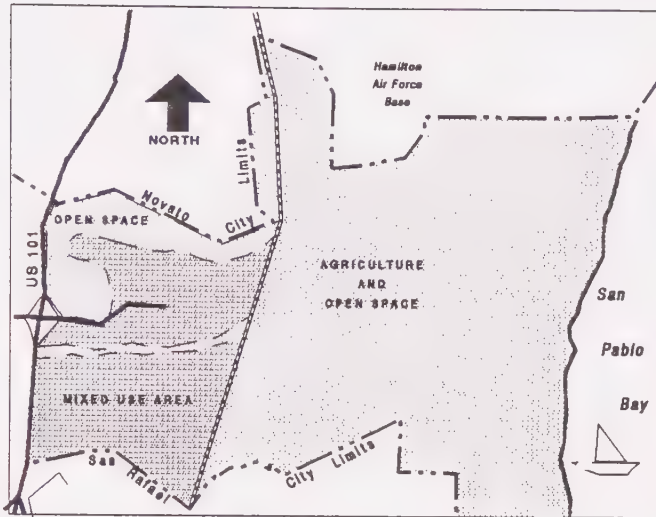
Each of the six alternatives would have very similar impacts on infill design. Land uses would remain the same for all but the Housing Alternative, where sites now designated for commercial development would be required to have some housing as well. Development densities would vary somewhat, but each infill parcel would most likely be granted some development to accommodate the rights of property owners.

Impacts of infill development in Marin's unincorporated communities would be mitigated through the application of the policies and development standards spelled out in Marin's community plans. These community plans would remain unchanged under all of the land use alternatives. Development of vacant land in areas not governed by community plans would be under the jurisdiction of the County's environmental review, design review, and master plan approval processes. Development in cities would be subject to environmental review and the local permit review processes.



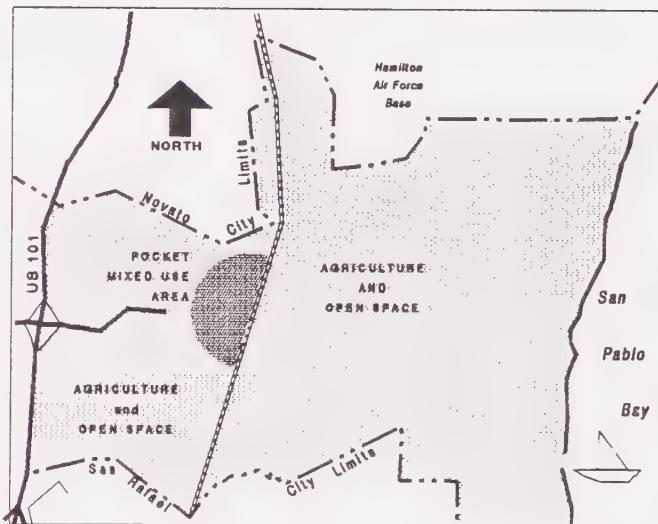
FIGURE 3

## Alternative Patterns of Development on St. Vincent's / Silveira Lands



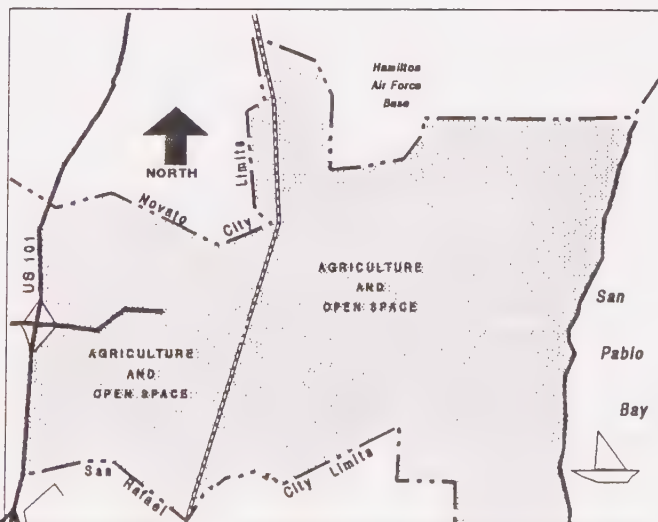
### Local Policy Alternative

**Mixed Use Area Includes:**  
Approximately 8 units per acre across the proposed 350 acre residential portion of the site, somewhat less than 261,000 square feet of office use, and commercial or neighborhood commercial uses of 100,000 square feet or less.



### Pedestrian Pockets Alternative

**Pedestrian Pocket Includes:**  
The same amount of development under the Local Policy Alternative condensed into an area 1/4 mile from a proposed transit stop.



### Public Acquisition Alternative

0 0.5 miles

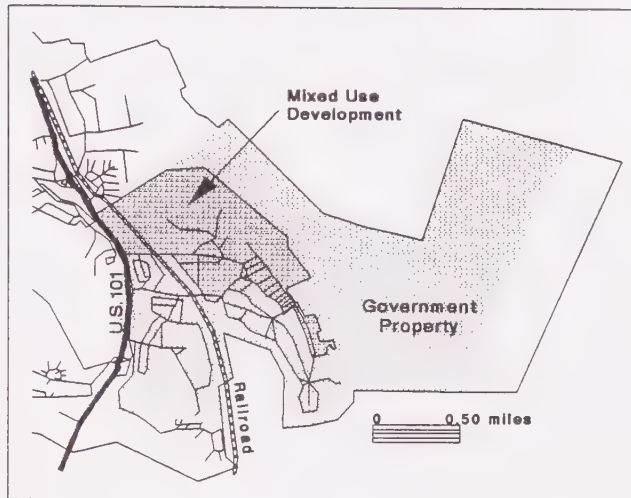
A scale bar indicating a distance of 0.5 miles, with a small graphic of a sailboat below it.



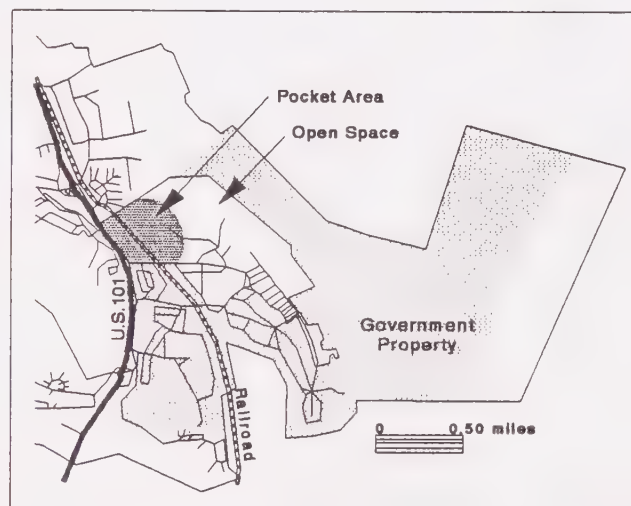


FIGURE 4

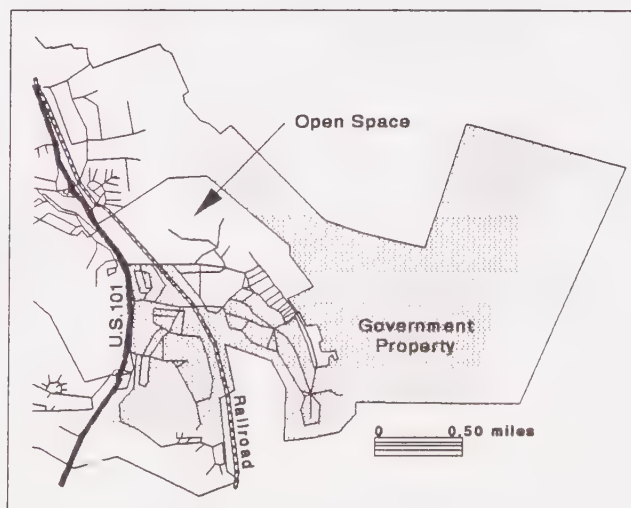
## Alternative Patterns of Development on Hamilton Air Force Base Property



Local  
Policy



Pedestrian  
Pockets



Public  
Acquisition

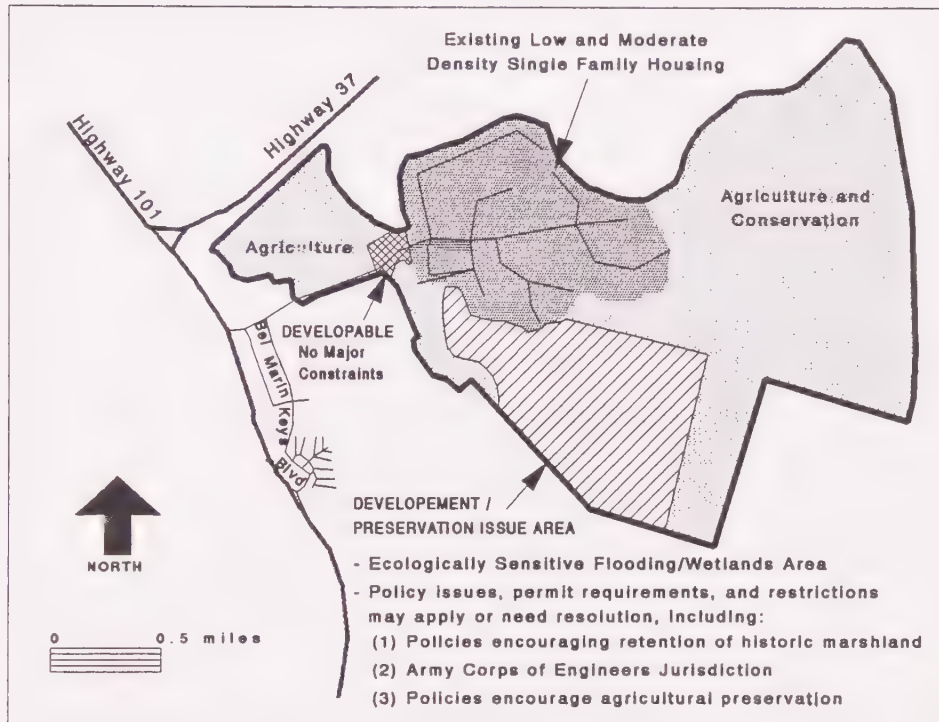




FIGURE 5

## Alternative Patterns of Development in the Bel Marin Keys Area

### Local Policy Alternative



### Public Acquisition Alternative

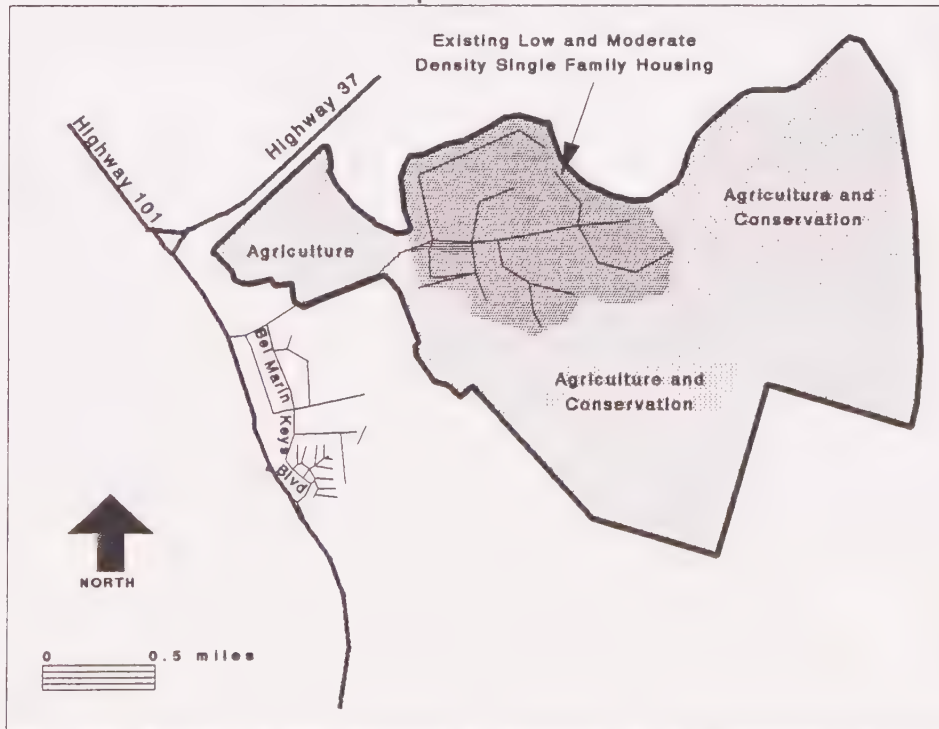




FIGURE 6

## Alternative Pattern of Development for Downtown Novato



0 0.75 miles



Proposed  
Pedestrian Pocket



Area of Reduced  
Development Potential \*

\* Area of Reduced Development Potential  
roughly drawn for illustrative purposes.

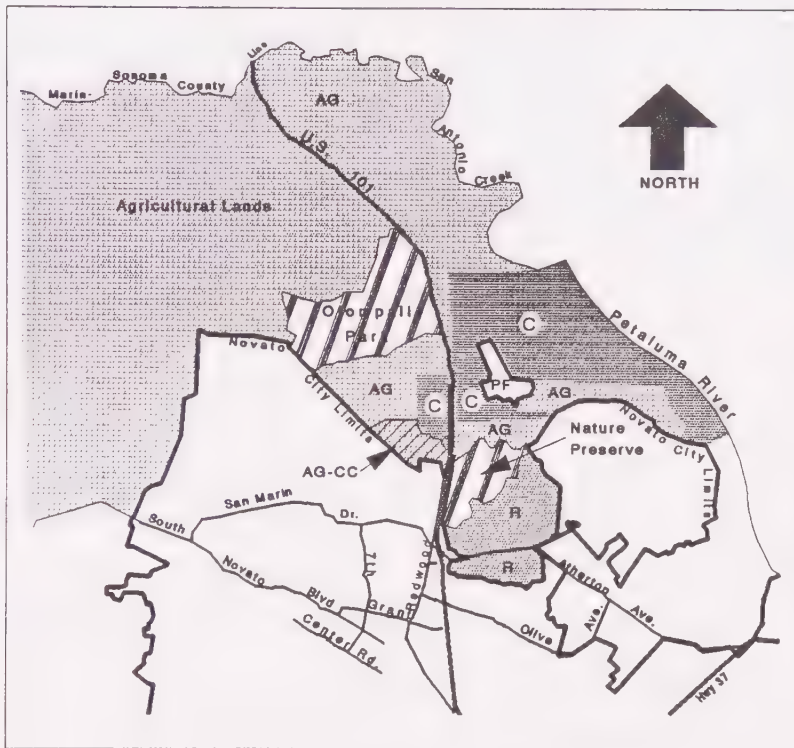




FIGURE 7

# Alternative Patterns of Development in North Novato

## Local Policy Alternative



## LEGEND



Zoned for Commercial



Zoned for Residential



Agricultural Lands



Agricultural Land Development Rights Acquired



Agricultural Lands in the City Centered Corridor

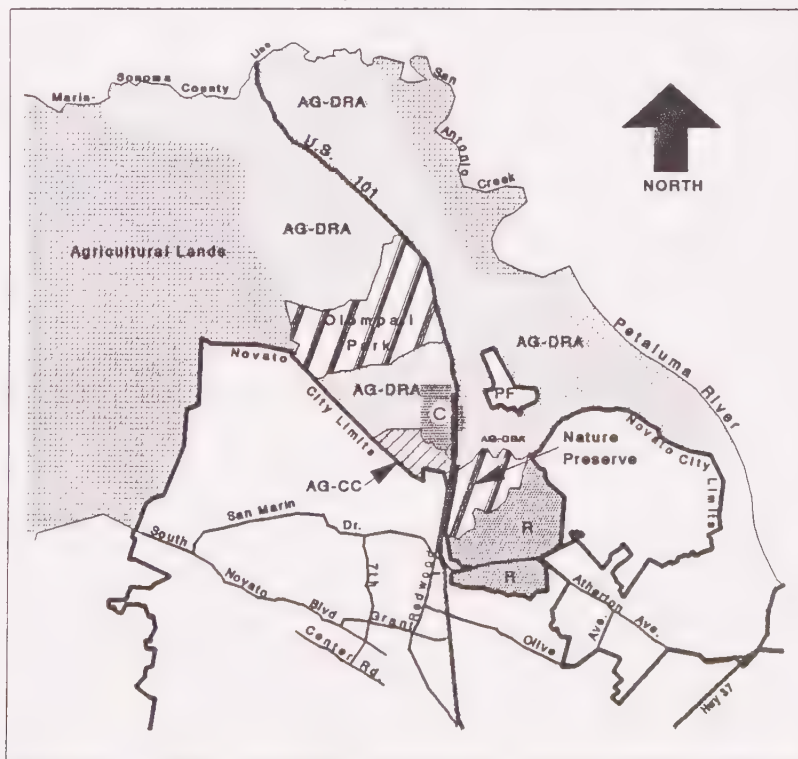


State Lands



Public Facility (Airport)

## Public Acquisition Alternative





### 3.1.2 Commercial Intensity and Job Opportunities

Each of the alternatives would have an impact on job growth and the local economy. Increased amounts of commercial space would create the opportunity for more local jobs, more employment opportunities for residents and opportunities for expansion of local businesses. More commercial space may also create higher commercial vacancy rates and heighten competition among Marin cities for retail sales dollars. Alternatives which restrict the availability of commercial space will raise commercial rents, limit business expansion opportunities and force some local firms to locate in less expensive areas. Alternatives which restrict development in some portions of the county may induce more rapid growth in unrestricted areas. The land use alternatives would also result in moderate differences in the intensity of commercial development on particular sites.

The Local Policy and Pedestrian Pocket alternatives would create the highest number of jobs. All the other alternatives would reduce potential job growth (Reduced Jobs, Housing) or reduce jobs and housing by restricting development in certain locations (Constrained Capacity and Public Acquisition). The following table shows the number of jobs that could result from the different levels of commercial development under the land use alternatives.

**TABLE 3**  
**COMMERCIAL SPACE AND JOBS UNDER THE LAND USE ALTERNATIVES**

Land Use Alternative	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change
1. Local Policy	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
2. Constrained Capacity	24,939,890	36,838,757	47.7%	88,214	125,179	41.3%
3. Increased Housing	24,939,890	33,096,989	32.7%	88,214	116,063	31.6%
4. Pedestrian Pockets	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
5. Public Acquisition	24,939,890	39,442,090	58.1%	88,214	133,780	51.7%
6. Reduced Jobs	24,939,890	37,477,292	50.3%	88,214	129,072	46.3%

Source: Marin County Planning Department, 1990

The alternatives with the highest number of jobs, Local Policy and Pedestrian Pockets, would create the most employment opportunities for Marin County residents. A possible labor shortage may cause wage rates to rise. The alternatives would also affect growth rates in different parts of the county. The Constrained Capacity Alternative, which significantly restricts southern county growth, would result in more rapid growth in the Novato area and perhaps increased pressure to build in undeveloped areas in the City-Centered and Inland Rural Corridors. Similarly, the Public Acquisition Alternative may push growth pressures out of publicly acquired lands towards sites in the remainder of the City-Centered Corridor and Inland Marin where parcels have not been publicly acquired.





Commercial intensities would vary under the alternatives but would retain the largely suburban character of existing development. The number of jobs per acre, a measure of commercial intensity, is shown for each alternative in Table 4 below and in Appendix 1. Under the alternatives, the jobs per acre would range from .86 to 1.55 in the Novato Planning Area, less intensive than existing densities in the San Rafael and Richardson Bay Planning Areas. Commercial intensities in the San Rafael area could range from 4.44 to 3.47 jobs per acre under the alternatives.

**TABLE 4**

**COMMERCIAL INTENSITY BY PLANNING AREA UNDER THE LAND USE ALTERNATIVES**  
(Jobs Per Acre)

Land Use Alternative	Novato	Las Gallinas	San Rafael	Upper Ross	Lower Ross	Richardson Bay	West Marin
1. Local Policy	1.55	1.61	4.44	0.73	2.81	1.51	0.01
2. Constrained Capacity	1.15	1.37	3.54	0.67	2.69	1.35	0.01
3. Increased Housing	0.86	1.40	3.47	0.67	2.68	1.36	0.01
4. Pedestrian Pockets	1.55	1.61	4.44	0.73	2.81	1.51	0.01
5. Public Acquisition	0.99	1.60	4.44	0.73	2.81	1.51	0.01
6. Reduced Jobs	1.08	1.46	3.75	0.73	2.81	1.51	0.01

Source: Marin County Planning Department, 1990



### 3.1.3 Population Growth and Demographics

All the alternatives would result in a larger population. The alternative offering the most growth in population is Increased Housing. County population would rise from 223,774 to 292,236. The Constrained Capacity Alternative would result in the least growth, from 223,774 to 237,864. Table 5 shows the potential housing and population growth under the alternatives.

TABLE 5

#### HOUSING AND POPULATION GROWTH UNDER THE LAND USE ALTERNATIVES

Land Use Alternative	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change
1. Local Policy	96,342	123,692	28.4%	223,774	268,557	20.0%
2. Constrained Capacity	96,342	108,661	12.8%	223,774	237,864	6.3%
3. Increased Housing	96,342	134,235	39.3%	223,774	292,236	30.6%
4. Pedestrian Pockets	96,342	123,692	28.4%	223,774	268,557	20.0%
5. Public Acquisition	96,342	119,308	23.8%	223,774	258,947	15.7%
6. Reduced Jobs	96,342	123,692	28.4%	223,774	268,549	20.0%

Source: Marin County Planning Department, 1990

Even those alternatives which add the greatest number of new residents would not profoundly alter population density. The county would maintain a suburban low-density character under all the alternatives. In the Novato Planning Area, population densities range from 2.13 to 2.83 persons per acre under the alternatives but would not achieve the density of the San Rafael or Ross Valley areas. The highest population density would occur in San Rafael under the Increased Housing Alternative (5.11 people per acre). Many of the most potentially densely populated areas (Lower Ross Valley and Richardson Bay) have very little remaining developable land, suggesting that population densities of areas with future growth potential will resemble already developed portions of the county.





TABLE 6

**POPULATION DENSITY BY PLANNING AREA UNDER THE LAND USE ALTERNATIVES**  
(People per Gross Acre)

Land Use Alternative	Novato	Las Gallinas	San Rafael	Upper Ross	Lower Ross	Richardson Bay	West Marin
1. Local Policy	2.30	2.66	4.60	2.61	4.26	4.51	0.08
2. Constrained Capacity	2.15	2.03	3.92	2.44	3.90	4.14	0.06
3. Increased Housing	2.83	2.78	5.11	2.64	4.36	4.61	0.08
4. Pedestrian Pockets	2.30	2.66	4.60	2.61	4.26	4.51	0.08
5. Public Acquisition	2.13	2.33	4.60	2.61	4.26	4.51	0.08
6. Reduced Jobs	2.30	2.66	4.60	2.61	4.26	4.51	0.08

Source: Marin County Planning Department, 1990

The Association of Bay Area Governments (ABAG) projects that population growth in the county will occur in the following increments from 1990 to 2010:

Year	Population
1990	232,200
1995	240,400
2000	249,700
2005	258,400
2010	268,800

This is an 11% increase in population within twenty years. By comparison only San Francisco and San Mateo counties would have a smaller percent increase in population. Sonoma County is projected to increase its population by 28% and Solano by 40%. ABAG's projections suggest that Marin would reach full development under the Local Policy Alternative (268,557 people) by the year 2010. Because the Pedestrian Pocket and Reduced Jobs scenarios have the same number of housing units as the Local Policy Alternative, full development under these alternatives would also be expected to occur by 2010. The Capacity Constrained Alternative is expected to result in a maximum population of 237,864 persons. This would occur in 1995 according to ABAG growth rates. The Public Acquisition alternative estimate of 258,947 people would be reached by the year 2005.

A larger population implies a greater diversity in the age, ethnic composition, social and cultural backgrounds of county residents. The alternatives with the most population growth (Housing, Local Policy, Pedestrian Pockets) would increase the number of young people, young families, middle income families, and seniors. Restricted population growth over a twenty year period, such as would occur in the Constrained Capacity Alternative, would reduce the population diversity of the county.



The land use alternatives would influence the age profile of the population depending on how the housing supply is affected. Generally, an ample supply of housing of various types and prices will accommodate a wider range of ages. Restricting housing opportunities will tend to result in an "older" population than otherwise might be expected. When the housing supply is restricted, people have less opportunity to change their choice of housing. They will be less likely to move and make their former home available to a younger family. Restricting housing supply tends to increase housing prices, and middle-aged people can generally afford higher housing prices than younger people.

Under the Local Policy, Pedestrian Pockets and Reduced Jobs alternatives, the future age profile of Marin's population may be similar to that projected by the Association of Bay Area Governments. According to ABAG projections, the number of persons over age sixty-five will increase by 16,900 people between 1990 and 2010. By that time this group will comprise 16% of the population, compared to 11% in 1990. The number of persons younger than twenty is projected to stabilize after 1990, and remain relatively constant up to 2010. However, the under twenty age group will comprise a smaller percentage of the population, decreasing from 21% to 18% (because total population is increasing). The percentage of young adults in the twenty to thirty-four age group will also decline. Only 20% of the population will be comprised of this age group in 2010, compared to 23.5% in 1990. The number of people aged thirty-five to sixty-five will increase by about 22,000 people. As a percentage of total population, this broad group will only rise from 44% to 46%.

The Capacity Constrained Alternative is expected to have the greatest impact on the age profile of Marin's population. During the next twenty years, approximately 50,000 Marin residents will reach the household-forming ages of twenty to thirty. If it is assumed that two persons form a household (a conservative estimate), these 50,000 young people will form 25,000 new households. However, the "Capacity Constrained" Alternative would allow only an additional 12,319 housing units to be built. This figure is well below the conservative estimate of 25,000 new households forming in the county over the next twenty years.

Since almost all of the new units would probably sell or rent at market rates, more than half of the potential new households would be denied the opportunity to find a place to live in Marin. To the extent that more affluent people from outside the county move in to claim houses built under this scenario, an even greater number of local residents would be denied the opportunity to continue living in Marin. (While some additional housing units would become vacant due to migration, death, and other causes, it is likely to be a relatively small number.) The Capacity Constrained Alternative would likely reduce the percentage of younger households living in the county, thereby increasing the median age of the population compared to the Local Policy Alternative.

The Public Acquisition Alternative is expected to have a similar, but less significant impact on the future population than the Capacity Constrained Alternative. Under this alternative, there would be 4,400 fewer housing units than under the Local Policy Alternative. This translates directly into 4,400 fewer households able to live in Marin as compared to 12,700 fewer households under the Capacity Constrained Alternative. Total population would be about 9,600 less than under the Local Policy Alternative. Under the Public Acquisition scenario, young people would again bear the adverse effects of a restricted housing supply.





In contrast, the Housing Alternative may increase the percentage of younger persons living in Marin. A total of 134,235 housing units would exist in the county under this alternative, 10,500 more than under the Local Policy Alternative. In theory, this alternative would allow all of Marin residents entering the household-forming ages of twenty to thirty to find housing. Additionally, some households could move into the county to fill jobs generated by the local economy. However, the high cost of Marin housing could discourage people from moving to Marin.

### **3.1.4 Jobs/Housing Balance**

The jobs/housing balance strategy proposed in the 1973 Countywide Plan and the 1982 update sought to reduce commuting into San Francisco by providing Marin residents with the chance to work in the county. This reduction in commuting was intended to make Marin more self-sufficient, reduce energy consumption, and reduce freeway traffic. The policies did result in a reduction of commuting to San Francisco: between 1980 and 1988, the number of person trips across the Golden Gate Bridge fell from 41,378 to 38,747.

The new jobs in Marin did not just attract Marin residents, however. Throughout the 1980s, it has become clear that Marin added many jobs that were filled by people who lived elsewhere. In particular, the number of vehicles commuting into Marin from Sonoma County has dramatically increased and contributes to the traffic problem experienced on Highway 101 today.

While new workers were coming into Marin, the County did not add freeway capacity or transit systems to accommodate the new work force. Marin jobs were scattered along the Highway 101 corridor, making it difficult to provide convenient and efficient transit service. The dispersed land use pattern made it much more convenient for workers to drive in their personal automobiles rather than carpool, vanpool, or take the bus.

Marin workers desiring to avoid a long commute found that housing prices in Marin far exceeded their ability to pay. They were therefore likely to live in less expensive Sonoma County. Workers in Marin in 1986 earned an average of \$20,226 per year. Even in a two-wage household, these workers could not afford the average home in Marin which required an annual salary of \$63,000. Most new employees traveled to Marin by car. The end result was that as local employment increased, so did traffic.

Also during the 1970s and 1980s, new housing development in Marin, at all price levels, did not keep pace with the development of jobs. Following the passage of Proposition 13 in California, which reduced property taxes as a primary source of revenue, local governments in California have attempted to balance their budgets with increased commercial growth and have discouraged residential growth, which requires costly services such as fire protection and schools. Moreover, the costs associated with serving commercial growth come primarily from large new capital expenditures for such facilities as roads and transit. These costs are not reflected in most Marin local government budgets since these facilities have not been expanded in the county.

Marin's jobs/housing balance would not improve much under any of the alternatives. The amount of commercial growth projected for the county will generate more jobs than people to fill them under all the land use alternatives. This job surplus could slow commercial growth or create significant commercial



vacancies since firms will have an increasingly difficult time finding workers from the restricted local population. These labor shortages may exacerbate the traffic problem since employers will try to recruit workers from farther and farther away to meet their needs. On the other hand, commercial development may not take place because of a shortage of workers.

Job and population growth under the Local Policy and Pedestrian Pockets alternatives could add 62,000 jobs while adding only 27,000 new workers, not all of whom will choose to work in Marin. A survey taken in 1987 showed that 36% of Marin residents commuted to jobs out of the county, mostly to San Francisco. If 36% of Marin residents continue to commute elsewhere, the number of workers available for Marin jobs will drop to 17,300 creating a labor shortage of 45,000 workers under both the Local Policy and Pedestrian Pockets alternatives. (This analysis assumes that as more local jobs are added in Marin, workers commuting to higher paying jobs outside the County will not give up these jobs in favor of lower paying jobs in Marin.)

The Constrained Capacity, Reduced Jobs and Public Acquisition alternatives reduce job growth, but still leave labor shortages to be filled by in-commuters. The Constrained Capacity Alternative would create a shortage of 31,200 workers. The Public Acquisition Alternative reduces jobs more than housing, but still results in a shortage of 31,700 workers. While the Reduced Jobs Alternative would cut jobs and leave proposed housing development, it still results in a 23,300 shortage in the labor force.

The Housing Alternative would create the best numeric match between jobs and housing, with a labor deficit of only 1,200 workers. This alternative does not guarantee that the price of Marin housing will be affordable to Marin workers, however. While increasing the amount of housing will theoretically reduce housing prices, Marin land costs are so high and densities so low that new housing may not necessarily be affordable to moderate and or low income families. Successfully reducing housing prices will require higher housing densities and subsidies.

Another measure of jobs/housing balance is the ratio of jobs to housing. A jobs-housing ratio less than one suggests that a community has a shortage of jobs for the available labor force. A ratio greater than 1.4 suggests that a community has a shortage of homes for local workers.

Table 7 below presents jobs/housing ratios for Countywide Plan planning areas under the land use alternatives. These ratios show that the Upper Ross, Richardson Bay, and West Marin planning areas will remain predominantly residential communities under all the land use alternatives. The Lower Ross and Las Gallinas planning areas will retain a balance of jobs and housing under all of the alternatives. The Novato Planning Area will change from a predominantly residential community (1987) to either a more balanced community (Capacity Constrained, Public Acquisition, Reduced Jobs) or a community with an excess of jobs (Local Policy, Pedestrian Pockets).

San Rafael would retain a balance of jobs to housing under the Increased Housing and Reduced Jobs alternatives. The increase in San Rafael jobs under the Local Policy, Capacity Constrained, Pedestrian Pocket, and Public Acquisition alternatives would create an excess of jobs over housing.





The balance of jobs and housing selected for the preferred alternative will affect Countywide Plan policies in the Community Development, Transportation, Community Facilities, Housing, and Environmental Quality Elements. Countywide Plan policies which promote balanced communities including jobs, housing, and shopping in order to reduce traffic congestion will have to be changed. All policies referring to jobs/housing balance as a method of reducing traffic will require modification under all alternatives in order to more accurately reflect the true relationship between housing, jobs and traffic.

**TABLE 7**  
**JOBS/HOUSING RATIOS FOR LAND USE ALTERNATIVES**

Land Use Alternative	Novato	Las Gallinas	San Rafael	Upper Ross	Lower Ross	Richardson Bay	West Marin
1987 Condition	0.7	1.4	1.5	0.5	1.3	0.6	0.4
Local Policy	1.7	1.4	1.9	0.6	1.5	0.6	0.3
Constrained Capacity	1.3	1.6	1.8	0.6	1.6	0.6	0.3
Increased Housing	0.8	1.1	1.3	0.5	1.4	0.6	0.3
Pedestrian Pocket	1.7	1.4	1.9	0.6	1.5	0.6	0.3
Public Acquisition	1.2	1.6	1.9	0.6	1.5	0.6	0.3
Reduced Jobs	1.2	1.2	1.6	0.6	1.5	0.6	0.3

Source: Marin County Planning Department, 1990

### 3.1.5 Fiscal Impacts

The total amount of additional funding needed to cover local government capital and operating costs for the six land use alternatives would range from a low of \$468 million for the Capacity Constrained Alternative to a high of \$568 million for the Local Policy and Pedestrian Pocket alternatives between 1990 and 2010.

The balance between the cost of local government services and the revenue from local sales taxes, property taxes, and service charges would be similar for the six alternatives for the twenty years from 1990 to 2010. The capital cost of the transportation improvements and sewer facilities needed to serve the six alternatives between 1990 and 2010 would also be very similar. The only major capital cost differences among the alternatives would be for property acquisition, new water supplies, and sanitary facilities. The Public Acquisition Alternative would include approximately \$75 million in property acquisition costs not included in the other five alternatives. The Capacity Constrained Alternative would cost \$60 million less than the other alternatives for water supplies and sanitary facilities since this alternative would not include any additional service capacity. The fiscal impacts of the alternatives are summarized in Table 8.



TABLE 8

**SUMMARY OF FISCAL IMPACTS OF LAND USE ALTERNATIVES**  
(In Millions of Dollars)

	Local Policy	Constrain. Capacity	Increased Housing	Pedestrian Pocket	Public Acquisition	Reduced Jobs
<b><u>COSTS:</u></b>						
Property Acquisition	\$ 0	\$ 0	\$ 0	\$ 0	\$ 75	\$ 0
Local Govt. Services to all Residences	\$4,988	\$4,620	\$5,250	\$4,988	\$4,830	\$4,988
Local Govt. Services to Commercial Devpt.	\$1,166	\$1,050	\$ 987	\$1,166	\$1,092	\$1,070
Transportation Improvements	\$ 581	\$ 581	\$ 581	\$ 581	\$ 581	\$ 581
Sewer Facilities	\$ 24	\$ 13	\$ 22	\$ 24	\$ 19	\$ 19
Water Supplies/Facilities	\$ 60	\$ 0	\$ 60	\$ 60	\$ 60	\$ 60
<b><u>REVENUES:</u></b>						
Commercial Property Tax Revenue	\$ 846	\$ 756	\$ 714	\$ 846	\$ 819	\$ 777
Sales Tax Revenue	\$ 890	\$ 840	\$ 924	\$ 890	\$ 888	\$ 890
Residential Property Tax Revenue/Misc. Revenue	\$4,515	\$4,200	\$4,725	\$4,515	\$4,410	\$4,515
<b><u>FUNDING NEEDED:</u></b>	<b>\$ 568</b>	<b>\$ 468</b>	<b>\$ 537</b>	<b>\$ 568</b>	<b>\$ 540</b>	<b>\$ 536</b>

Source: Marin County Planning Department, 1990





## 3.2 TRANSPORTATION IMPACTS

### 3.2.1 Transportation System Modeling

The transportation impacts of each land use alternative have been evaluated using the existing transportation system as well as the transportation system proposed in the Marin County Sales Tax Expenditure Plan. The major components of the Marin County Sales Tax plan include 1) continuous High Occupancy Vehicle (HOV) lanes for buses and carpools from the Richardson Bay Bridge to the Sonoma County line, 2) a light rail train operating along the Northwestern Pacific right-of-way between Novato and Larkspur, 3) increased bus service (including routes that serve the train), and 4) increased ferry service to San Francisco.

The transportation analysis focused on the evening "peak hour," the sixty minute period of greatest travel demand. Because there are more than just work to home trips occurring during this hour, all trip types were measured. A description of the methodology used to project future travel demand is included in Appendix 3.

The primary evaluation measures for transportation system performance are "Level of Service" and its corresponding "volume to capacity" ratio. Volume is the demand: the number of vehicles that "want" to be on the freeway. Capacity is the supply: the number of vehicles that the freeway can accommodate. When the volume to capacity ratio exceeds one, the result is system failure or Level of Service F. Level of Service (LOS) is expressed as a letter grade ranging from A for excellent to F for failure. Both volume to capacity ratios and Levels of Service are discussed as part of the system evaluation under each land use alternative.

TABLE 9  
LEVELS OF SERVICE

Letter Grade	Volume to Capacity Ratio	Approximate Freeway Speeds
A	0 - .59	55+
B	.60 - .69	55+
C	.70 - .79	45 - 55
D	.80 - .89	35 - 45
E	.90 - 1.00	25 - 35
F	1.00+	0 - 25

SOURCE: Marin County Planning Department, 1990



### 3.2.2 Trip Generation

The first step in the transportation evaluation was to determine the number of average daily trips generated by each of the land use alternatives. Different trip generation totals among the land use alternatives result in the major differences in transportation system performance shown below. Table 10 shows the number of trips generated by each of the land use alternatives and compares them against the number of trips generated by the Local Policy Alternative (which generates more trips than any other alternative).

**TABLE 10**  
**NUMBER OF TRIPS GENERATED BY EACH LAND USE ALTERNATIVE**

Land Use Alternative	Total Trips Countywide	Percentage Change From Local Policy
Local Policy	825,795	
Increased Housing	812,579	-1.6%
Pedestrian Pockets	808,677	-2.1%
Reduced Jobs	797,222	-3.6%
Public Acquisition	791,051	-4.4%
Capacity Constrained	733,227	-12.6%

SOURCE: Marin County Public Works Department Transportation Model, 1990

### 3.2.3 Existing Transportation System Performance Under Land Use Alternatives

The existing transportation system would suffer severe congestion under all land use alternatives. As shown in Table 11, the Level of Service would be F from Cal Park Hill to the Sonoma County line (with the exceptions at Puerto Suello Hill of Level of Service D under the Capacity Constrained Alternative, and Level of Service E under the Reduced Jobs Alternative). Since the existing system is highly congested now, even the most modest increase in travel demand would push the system "over the edge" to Level of Service F or failure. The effect would be bumper to bumper traffic at slow speeds. It is absolutely necessary to improve the existing transportation system to avoid total failure under all of the land use alternatives. Table 11 shows a summary of Level of Service for each of the alternatives using the existing transportation system.

**TABLE 11**  
**LEVEL OF SERVICE ON HIGHWAY 101**  
**Existing Transportation System**  
(Afternoon Peak Hour Northbound Traffic)

Screenline	1987 Conditions	Local Policy	Constrained Capacity	Increased Housing	Pedestrian Pocket	Public Acquisition	Reduced Jobs
Sonoma County line	D	F	F	F	F	F	F
Pacheco Hill	E	F	F	F	F	F	F
Puerto Suello Hill	C/D	F	D	F	F	F	E
Cal Park Hill	F	F	F	F	F	F	F
Alto Hill	B/C	C	C	C	C	C	C
Golden Gate Bridge	D	E	E	E	E	E	E

SOURCE: Marin County Planning Department, 1990





### 3.2.4 Proposed Sales Tax Transportation System Performance Under Land Use Alternatives

The transportation system proposed in the Marin Sales Tax Plan could accommodate any of the land use scenarios only if two-person carpools are permitted to use the HOV lanes. If only three-person carpools were allowed in the HOV lanes, the other lanes would experience volume to capacity ratios greater than one (failure) from Marinwood to Sonoma.

Future congestion will occur mostly between Pacheco Hill and the Sonoma County line. For each land use alternative, the Level of Service would be either D or E along this stretch of the freeway without McInnis Parkway. The Marin Sales Tax Expenditure Plan established a Level of Service D goal for the freeway. Only the Constrained Capacity Alternative would meet the Level of Service D goal at Pacheco Hill without McInnis Parkway. The other scenarios would result in Level of Service E without McInnis Parkway. If McInnis Parkway were built from the County Civic Center to Highway 37, it would improve traffic on Highway 101 in the northern portion of the county by a whole letter grade. For example, under the Local Policy Alternative, the Level of Service would improve to D, allowing vehicles to travel ten miles per hour faster on 101, a significant improvement.

North of Novato, the Level of Service would improve to D for all alternatives except Local Policy. The Level of Service from Larkspur through San Rafael would improve to B or C under all of the land use alternatives, a significant improvement over today's D through F. Current congestion south of San Rafael would be relieved due to the increased road capacity at Cal Park Hill and increased transit ridership.

### 3.2.5 Proposed Sales Tax Transportation System Performance At Key Locations

The impact of the land use alternatives differs at selected locations along the freeway. The locations used for this analysis include the Golden Gate Bridge, Sonoma County line, and tops of hills which separate urban areas (Alto Hill near Mill Valley, Cal Park Hill near Larkspur Landing, Puerto Suello Hill near the County Civic Center, and Pacheco Hill between Marinwood and Ignacio). These places are called "screenlines," imaginary lines across the freeway where the flow of vehicles can be measured. Each land use alternative was evaluated at these screenlines to determine its effect on the transportation system. If Level of Service varies between screenlines, it indicates that demand and supply differ along the freeway. If LOS varies at the same screenline for different scenarios, it indicates that different scenarios produce different travel demand at the same place.

Generally, the Level of Service at a screenline reflects the amount of development on either side of the screenline. Alternatives with greater amounts of development tend to produce more congestion than alternatives with lesser amounts of development. Table 12 is a summary chart showing the Level of Service for existing transportation conditions and the transportation system proposed in the Marin Sales Tax Expenditure Plan.



TABLE 12

**LEVEL OF SERVICE ON HIGHWAY 101**  
**Proposed Sales Tax Transportation System**  
 (Afternoon Peak Hour Northbound Traffic)

Screenline	1987 Conditions	Local Policy	Constrained Capacity	Increased Housing	Pedestrian Pocket	Public Acquisition	Reduced Jobs
Sonoma County line	D	E	D	D/E	D	D	D
Pacheco Hill							
Without McInnis	E	E	D	E	D/E	D/E	E
With McInnis		D	C	D	C		D
Puerto Suello Hill	C/D	C	B	B/C	B/C	B/C	B/C
Cal Park Hill	F	C	B	C	C	C	C
Alto Hill	B/C	C	B	C	C	C	C
Golden Gate Bridge	D	D	D	D	D	D	D

SOURCE: Marin County Planning Department, 1990

### 3.2.6 Transportation System Impacts at Key Locations

By a slight margin, the Local Policy Alternative would produce the greatest travel demand among the six alternatives because it generates the most trips. This is reflected in the volume to capacity ratios and Levels of Service at each screenline. At the Golden Gate Bridge the LOS would be D, the same as it was in 1987. At Alto Hill, LOS would improve to C and be only slightly worse than the 1987 LOS. Level of Service C would be maintained all the way to Pacheco Hill, where it would drop to D, if McInnis Parkway were built. Without McInnis, LOS would drop to E. Between Pacheco Hill and the Sonoma line, LOS would be E. Table 13 shows both volume to capacity ratio and its corresponding Level of Service for the Local Policy Alternative as compared to 1987 conditions. The improvement resulting from McInnis Parkway is also shown.

TABLE 13

**TRANSPORTATION SYSTEM PERFORMANCE: LOCAL POLICY ALTERNATIVE**

Screenline	1987 Volume to Capacity	1987 Level of Service	----Proposed System----	Volume to Capacity	Level of Service
Sonoma County line	.85	D	.92	E	
Pacheco Hill					
Without McInnis	.95	E	.96	E	
With McInnis			.84	D	
Puerto Suello Hill	.80	C/D	.71	C	
Cal Park Hill	1.02	F	.74	C	
Alto Hill	.69	B/C	.72	C	
Golden Gate Bridge	.86	D	.85	D	

SOURCE: Marin County Planning Department, 1990





The Pedestrian Pocket Alternative would generate almost as many trips as the Local Policy Alternative because it has a comparable level of development. An important difference is that in the Pocket Alternative, development is clustered around three transit stations. The results, based on this preliminary analysis, are comparable to that of the Local Policy Alternative. Level of Service would be C or B north of the Golden Gate Bridge but would then drop to E at Pacheco Hill (or only C with McInnis Parkway). Level of Service would be better north of Novato than under the Local Policy Alternative.

The volume to capacity (v/c) ratio draws a sharper distinction between the Pocket Alternative and the Local Policy Alternative. The key point of difference is at Pacheco Hill. The v/c ratio would be .90 in the Pocket Alternative compared to .96 in the Local Policy Alternative. With McInnis Parkway, the v/c ratio would be .77 compared to .84 in the Local Policy Alternative. The Pocket Alternative has the potential to help relieve congestion at the most congested point of the freeway because of increased transit ridership (fewer automobiles would be on the freeway). More detailed computer modeling of these alternatives will show how many trips will shift to transit by examining relative travel times on the freeway and railroad.

TABLE 14

TRANSPORTATION SYSTEM PERFORMANCE: PEDESTRIAN POCKET ALTERNATIVE

Screenline	1987 Volume to Capacity	1987 Level of Service	-----Proposed System----- Volume to Capacity	Level of Service
Sonoma County line	.85	D	.72	D
Pacheco Hill				
Without McInnis	.95	E	.90	D/E
With McInnis			.77	C
Puerto Suello Hill	.80	C/D	.69	B/C
Cal Park Hill	1.02	F	.75	C
Alto Hill	.69	B/C	.72	C
Golden Gate Bridge	.86	D	.85	D

SOURCE: Marin County Planning Department, 1990

The Increased Housing Alternative would produce traffic results which are very similar to those of the Local Policy Alternative. The Levels of Service would be identical at each of the screenlines except Puerto Suello Hill, where it would be LOS B rather than C. The slight difference between these alternatives is reflected in volume to capacity ratios. At Puerto Suello Hill, the v/c ratio for the Housing Alternative would be .69 compared to .71 for the Local Policy Alternative, a small difference. North of Puerto Suello Hill, conditions would be the same between the two alternatives. If McInnis Parkway is built, the v/c would improve by a comparable amount for the Local Policy and Increased Housing Alternatives.



TABLE 15

## TRANSPORTATION SYSTEM PERFORMANCE: INCREASED HOUSING ALTERNATIVE

Screenline	1987 Volume to Capacity	1987 Level of Service	----Proposed System---- Volume to Capacity	Level of Service
Sonoma County line	.85	D	.91	E
Pacheco Hill			.96	E
Without McInnis	.95	E	.96	E
With McInnis			.83	D
Puerto Suello Hill	.80	C/D	.69	B/C
Cal Park Hill	1.02	F	.73	C
Alto Hill	.69	B/C	.71	C
Golden Gate Bridge	.86	D	.85	D

SOURCE: Marin County Planning Department, 1990

The Constrained Capacity Alternative would produce the lowest travel demand because it would have the least amount of development. Since fewer trips would be made, Level of Service and volume to capacity ratios would be better than those of the other alternatives. From Southern Marin up to Pacheco Hill, Level of Service would be B. The Level of Service would decline to D at Pacheco Hill and improve to C north of Novato. With McInnis Parkway, assuming it would even be built under this alternative, the Level of Service at Pacheco Hill would be C.

TABLE 16

## TRANSPORTATION SYSTEM PERFORMANCE: CONSTRAINED CAPACITY ALTERNATIVE

Screenline	1987 Volume to Capacity	1987 Level of Service	----Proposed System---- Volume to Capacity	Level of Service
Sonoma County line	.85	D	.88	D
Pacheco Hill				
Without McInnis	.95	E	.85	D
With McInnis			.73	C
Puerto Suello Hill	.80	C/D	.60	A/B
Cal Park Hill	1.02	F	.67	B
Alto Hill	.69	B/C	.67	B
Golden Gate Bridge	.86	D	.83	D

SOURCE: Marin County Planning Department, 1990

The Reduced Jobs Alternative would cut the potential number of new jobs in half. Even though there would be a reduction in trip making associated with this reduction in jobs, the Level of Service difference between this alternative and Local Policy would be modest. There would be an improvement at Puerto Suello



Hill from Level of Service C to B and an improvement near the Sonoma County line from E to D. The volume to capacity ratios indicate the relative modesty of this improvement. The v/c ratio at Puerto Suello Hill would be .68 compared to .71. At the Sonoma County line, the v/c ratio would be .72 compared to .75. Because this difference occurred at the boundary of a letter grade, the Level of Service grade changed. The volume to capacity ratios would differ by .03 for most of the freeway, which would not result in a letter grade change at other screenlines.

TABLE 17

TRANSPORTATION SYSTEM PERFORMANCE: REDUCED JOBS ALTERNATIVE

Screenline	1987 Volume to Capacity	1987 Level of Service	-----Proposed System----- Volume to Capacity	Level of Service
Sonoma County line	.85	D	.72	D
Pacheco Hill				
Without McInnis	.95	E	.93	E
With McInnis			.80	C/D
Puerto Suello Hill	.80	C/D	.68	B
Cal Park Hill	1.02	F	.72	B
Alto Hill	.69	B/C	.72	B
Golden Gate Bridge	.86	D	.85	D

SOURCE: Marin County Planning Department, 1990

The Public Acquisition Alternative would have an impact similar to the Reduced Jobs Alternative. Travel demand would be approximately the same as that for Reduced Jobs and lower than that for Local Policy. Level of Service would be C up to Puerto Suello Hill, where it would improve to LOS B. Level of Service would drop sharply to E at Pacheco Hill and improve to D north of Novato. McInnis Parkway would not be built under this alternative. Therefore, it would not relieve congestion at Pacheco Hill as in the other alternatives.

TABLE 18

TRANSPORTATION SYSTEM IMPACTS: PUBLIC ACQUISITION ALTERNATIVE

Screenline	1987 Volume to Capacity	1987 Level of Service	-----Proposed System----- Volume to Capacity	Level of Service
Sonoma County line	.85	D	.71	D
Pacheco Hill	.95	E	.90	D/E
Puerto Suello Hill	.80	C/D	.68	B
Cal Park Hill	1.02	F	.74	C
Alto Hill	.69	B/C	.72	C
Golden Gate Bridge	.86	D	.85	D

SOURCE: Marin County Planning Department, 1990





### 3.3 ENVIRONMENTAL QUALITY IMPACTS

#### 3.3.1 Air Quality

Marin County is located within the Bay Area Air Quality Management District. The BAAQMD has prepared a Bay Area Air Quality Plan, the purpose of which is to attain the National Ambient Air Quality Standards. Marin County is well within State and Federal Standards although the nine-county Bay Area has been classified as a non-attainment area for carbon monoxide and ozone.

The most significant source of air pollution in Marin County is automobile exhaust. Automobile exhaust increases as traffic grows and moves more slowly. Thus, the alternative that results in the least amount of traffic congestion will have the least adverse impact on air quality. Table 19 illustrates the number of daily person trips anticipated to be generated by each of the alternatives. For this analysis, the number of automobile trips serves to approximate the level of pollution generated, although a detailed analysis is required to produce more accurate air pollution figures. For a complete discussion of transportation impacts, please see section 3.2, Transportation Impacts.

TABLE 19

#### DAILY PERSON TRIPS

Land Use Alternative	Number of Daily Trips	% Increase above 1987 Conditions
1987 Conditions	645,633	N/A
Local Policy	825,795	28%
Constrained Capacity	733,227	14%
Increased Housing	812,579	26%
Pedestrian Pockets	808,677	25%
Public Acquisition	791,051	23%
Reduced Jobs	797,222	23%

Source: Marin County Planning Department, 1990

This discussion assumes that the improvements proposed in the Marin County Sales Tax plan are implemented. Without the improvements, all of the alternatives, with the exception of the Constrained Capacity Alternative, would have an equally severe impact on air quality.

The Local Policy Alternative and the Pedestrian Pocket Alternative are similar in terms of potential development, transportation system impacts and air quality impacts. However, the Pedestrian Pocket Alternative may relieve congestion by increasing transit ridership. As a result, the Pedestrian Pocket Alternative could have less impact on air quality than the Local Policy Alternative.

The Constrained Capacity Alternative would have the least development and thereby less adverse impact on air quality than any other alternative. Compared to the Local Policy Alternative, the Constrained Capacity Alternative would produce 92,568 fewer daily trips, with a corresponding decrease in the impact on air quality.



The Public Acquisition Alternative would have slightly less impact on air quality than the Local Policy Alternative, and would generate 34,744 fewer daily trips. The Increased Housing Alternative will be quite similar to the Local Policy Alternative, resulting in only 13,216 fewer daily trips. Finally, the Reduced Jobs Alternative could result in fewer commute trips than the Local Policy Alternative, a difference of 28,573 trips.

In general, any alternative which generates more trips will have more impact than those alternatives which minimize the potential for traffic congestion. Fortunately, Marin County has very good air quality and none of the alternatives are likely to result in a significant deterioration of air quality. Marin County will probably stay well within State and Federal Standards regardless of which alternative is implemented.

### **3.3.2 Hydrology, Drainage, and Water Quality**

Development under the alternatives could result in impacts on hydrology, drainage and water quality affecting streams, bays, other waterways, and riparian habitats. Future land development will create more impervious surface and increase storm water runoff, affecting drainage patterns and waterways. Runoff from buildings and roadways may contain chemical or petroleum residues which have the potential to degrade water quality. Development may destabilize hillsides or stream banks and increase the likelihood of erosion, resulting in more deposits of silt and soil in sensitive riparian areas.

The land use alternatives vary in their potential impacts on hydrology according to the amount of impervious surface they create and the location of development. The Local Policy and Housing alternatives would most likely result in the greatest amount of impervious surface since they would allow the highest levels of development on scattered development sites. The Constrained Capacity and Reduced Jobs alternatives would allow less development than the Local Policy and Housing alternatives, but development would be dispersed. A dispersed development pattern would create a greater amount of impervious surface.

The Pedestrian Pocket Alternative, while allowing the same amount of development as the Local Policy Alternative, would concentrate development into a smaller land area than any of the above-mentioned alternatives. This would significantly reduce the amount of impervious surface created on the pocket sites.

The Public Acquisition Alternative would have less impact on water quality on the sites targeted for acquisition than the other alternatives because it would not permit development at those locations. The alternative would not alter hydrology impacts on other sites where development would resemble the decentralized, low-density pattern likely under the Local Policy Alternative.

The potential impacts of all the alternatives could be largely mitigated through the policies of the Countywide Plan and other planning policy documents. The cities and the County each seek to minimize the hydrological, drainage, and water quality impacts of development through plan policies, permit processing, and environmental review.





The Marin Countywide Plan and the County's community plans have very strong policies protecting water quality and preserving natural watercourses and riparian areas. The Countywide Plan has very carefully sought to protect against the adverse hydrological impacts of development through the Environmental Quality Element policies. This Element establishes Stream and Creekside Conservation Areas which acknowledge the value of riparian systems, designating a buffer against development that extends 100 feet to each side of a watercourse in the inland rural corridor and 50 feet to each side in the City-Centered Corridor. The plan details standards which are applied by Marin County planners in reviewing applications to ensure the protection of riparian systems, vegetation, fish and wildlife, and natural aesthetics. These standards also seek to prevent erosion, water quality degradation, and flooding.

The Marin Countywide Plan also has extensive policies governing development in the Bayfront Conservation Zone which protect habitats from disruption of stream flow or diminished water quality. The potential hydrology, drainage, and water quality impacts of the land use alternatives shall be considered in all development review in the unincorporated county and appropriate mitigations will be required.

The Regional Water Quality Control Board will review the impact of the Countywide Plan preferred land use and transportation alternatives to determine whether the quality and quantity of expected surface runoff will meet their discharge standards. If necessary, the Water Quality Control Board will require discharge elimination systems to protect water quality. The policies of local agencies which regulate development to protect water quality will apply to all of the alternatives. More detailed water quality studies of the water quality impacts of the alternatives may be conducted in the Environmental Impact Report for the preferred alternative.

### **3.3.3 Views and Scenic Locations**

The alternatives could result in visual and scenic impacts through additional development of residential, commercial, and institutional buildings. Unless carefully sited and designed, the buildings could alter important ridgeline views, bay views or other scenic locations. Such visual impacts could occur on infill sites or parcels located in undeveloped areas.

The potential for visual impacts on infill sites varies among the alternatives. Land uses on infill sites would remain the same for all but the Housing Alternative, where sites now designated for commercial development would be required to have some housing as well. Development densities would vary under the alternatives, but each infill parcel would have some development potential to accommodate the rights of property owners. The impacts of infill development in Marin's unincorporated communities would be mitigated through the application of the policies and development standards of Marin's community plans. These community plans remain unchanged under all the land use alternatives.

On large vacant sites, development would occur in clusters, according to existing county policies. The Local Policy and Housing Increased alternatives have a large volume of relatively low-density development, would have the most potential for visual impacts on large vacant parcels. Development on visually sensitive sites such as St. Vincent's/Silveira would replace the aesthetically pleasant "rural landscape" with a man-made environment accompanied by some open areas.



The Constrained Capacity and Reduced Jobs alternatives, with less development than the Local Policy and Housing alternatives, might result in smaller buildings or buildings over a smaller portion of a development site. These alternatives, however, would transform largely open space sites into private home sites with fewer natural or publicly accessible open areas.

By concentrating development onto small sites and reserving surrounding land for open and natural areas, the Pedestrian Pocket Alternative would be able to accommodate a larger amount of growth than the Constrained Capacity Alternative while retaining some scenic open space views. Pocket buildings would be taller and more densely clustered compared to those under other land use alternatives, while retaining larger open areas and views of the bay.

The Public Acquisition Alternative would have the fewest potential visual impacts on undeveloped areas of the City-Centered Corridor by acquiring property rights to prevent urban development. The Public Acquisition Alternative would protect views of undeveloped land at St. Vincent's/Silveira, Hamilton AFB, Bel Marin Keys, and the Gness Field area.

The visual impacts of all the alternatives could be largely mitigated through proper design and siting as required through the local review process. In unincorporated Marin, potentially significant impacts on views of scenic locations could be mitigated by Countywide Plan policies adopted in the 1982 Environmental Quality Element and proposed in the 1989/90 Plan. Countywide Plan Resource Conservation Area policies protect visual access to streamside, bayfront and scenic water, and ridge and upland greenbelt areas (Policies EQ 2.23, 2.73, 3.15, and 3.16, Draft Environmental Quality Element, January 1989). These policies would apply to all new projects at the time of approval.

In addition to Countywide Plan policies, the County's community and local coastal plans contain policies that protect views and scenic locations. These policies are reviewed with each project during the master plan, development plan, design review, and environmental review processes.

### **3.3.4 Biological Resources**

A number of sensitive biological communities are located in Marin County. Lands in Marin provide habitats for a variety of plant and animal species. Changes in the natural landscape caused by the land use alternatives will affect many habitat types and species important to the diversity of the county's biological resources. These biological resources are more fully described in the Environmental Quality Element Technical Report #4, "Species Protection in Marin", September 1989.

The diverse biological resources of the county include a number of threatened or endangered species and significant natural areas. The County has an inventory of biological resources prepared by the California Department of Fish and Game called the Natural Diversity Database. This database indicates the number of threatened, endangered and candidate species in Marin County. The county also includes a number of significant natural areas which are known to contain plants for animals listed as threatened, endangered, or candidate species. Several of these natural areas are located in the City-Centered Corridor including: Tiburon South, Ring Mountain, Tiburon Middle Range, and the mouth of Gallinas Creek.





None of the sensitive areas listed above are on sites targeted for development in the land use alternatives. Nevertheless, the Land Use Alternatives have the potential to impact biological resources by disturbing habitats or migratory pathways. Development also has the potential to replace natural areas with developed uses.

The land use alternatives that physically restrict the siting of development (Pedestrian Pockets and Public Acquisition) will most likely have less impact on biological resources than other alternatives.

The transportation system chosen for analysis with each alternative would have potentially significant impacts on biotic species and habitat areas, particularly wetlands. A relatively small portion of the rail and highway improvements might cross designated wetlands. Since at least some filling and/or dredging would probably occur for a rail line, wetlands will be affected temporarily during the construction process. Affected areas would be restored once construction is completed. The proposed rail line and freeway expansion have the potential to impact three species listed as threatened or endangered: the Salt Marsh Harvest Mouse (endangered), the California Clapper Rail (endangered), and the California Black Rail (threatened). The specific location and amount of impacts on wetlands and riparian habitat would be determined when the rail system and highway expansion project are designed. At that time, exact impacts can be measured and mitigations required.

Biological resources impacts could be mitigated for all the alternatives through Countywide Plan policies and development review. Biotic species and their habitats in the unincorporated county, particularly wetland areas, would be protected by proposed 1990 Countywide Plan Environmental Quality Element policies. These policies specify that species and habitats must be preserved, and that development in wetland areas should be restricted to protect sensitive wetland environments. Projects affecting biological resources or habitats would require mitigation. When a project is proposed in an area where there are wetlands or threatened or endangered species, a more extensive environmental review is required and the potential impact must be mitigated.

### **3.3.5 Agricultural and Open Space Land**

The land use alternatives would affect open areas as well as areas currently used for agriculture, primarily grazing. All land use alternatives focus development in the City-Centered Corridor and, for the most part, do not impact rural parts of inland and western Marin. Several rural-like areas in the City-Centered Corridor would be affected differently by the land use alternatives including St. Vincent's/Silveira, Bel Marin Keys Unit 5, and lands north of Novato.

Under the Pedestrian Pocket Alternative, development in the St. Vincent's/Silveira site would be concentrated onto a small portion of the site, leaving much of the land area for grazing and open space. The objective of the Public Acquisition Alternative would be to preserve land as open space by purchasing land or development rights. The other alternatives propose low-density development over much of the St. Vincent's site, reducing the amount of agricultural and open space land.

Productive agricultural land at the Bel Marin Keys site would remain in agricultural use under all the land use alternatives. Any future development proposal would require the retention of agricultural production on the site as





part of a Master Plan approval in accordance with County agricultural preservation policies. The Public Acquisition Alternative would require the County to purchase land or development rights at this site.

The potential impacts of the Public Acquisition Alternative on agriculture should be examined closely. By restricting the use of developable land in the City-Centered Corridor, the Public Acquisition Alternative may divert development pressure to lands in western and inland Marin. Moreover, the county cannot at present fund development rights acquisitions in inland and west Marin sufficient to guarantee the preservation of county agriculture. Money raised to secure open and agricultural lands in perpetuity may not be enough to acquire development rights in east, inland, and west Marin combined.

### **3.4 HOUSING IMPACTS**

#### **3.4.1 Housing Affordability**

In the future, housing in Marin is likely be affordable to only the most affluent households under any of the alternatives for a number of reasons. Current housing market trends in Marin and the Bay Area indicate that housing prices are steadily rising. Marin has little developable land zoned for housing, and much of it is located along San Francisco Bay or in hill areas where high site development costs contribute to high housing prices. Development impact fees for services such as schools and transportation improvements will add to the cost of each new home. The region's sustained economic growth will increase housing demand and hence prices. Finally, ABAG projects that annual increases in household incomes between 1985 and 2005 will not be as large as those of the 1980 to 1985 time period, such that Marin housing will be affordable to fewer households.

Some of the alternatives may make housing less affordable than others by restricting development and driving up housing prices. Under the Constrained Capacity and Public Acquisition alternatives, housing costs would rise more because the supply of housing would be more limited. In contrast, the Increased Housing Alternative would promote housing development by rezoning commercial land for housing. Housing prices in Marin are so high, however, that even the Housing Alternative would not significantly reduce prices. Without programs to provide incentives or subsidies it would be impossible to meet the demand for housing affordable to even moderate income households.

#### **3.4.2 Regional Housing Needs**

The County would not be able to entirely meet its share of the regional housing need as defined by the Association of Bay Area Governments. ABAG has projected that 10,489 units will need to be built in Marin between 1988 and 1995 in order for all jurisdictions in the county to meet their share of the regional housing need. This includes 3,571 units affordable to those below moderate income (less than 80% of median). The Countywide Plan, and the General Plans of San Rafael, Tiburon and Corte Madera all indicate that they will meet their share of the regional need for above moderate-income housing (greater than 120% of median). However, they will not meet their share of the regional need for moderate- or below moderate-income housing. Their conclusions are supported by a study done by the Bay Area Council in 1988 which found only one jurisdiction in the Bay Area (Fairfax) meeting its share of the regional need for below moderate-income housing between 1983 and 1988.



Under the Local Policy, Increased Housing, Pockets, Public Acquisition and Reduced Jobs alternatives, the County and the cities could meet their share of the regional housing need for above moderate-income households, but not for other income groups. With the Constrained Capacity Alternative, on the other hand, it would be virtually impossible for Marin to meet its share of the regional housing needs at any income level. The maximum number of housing units that could be built under this alternative is only 12,319 units. Consequently, over 3/4 (85%) of all future development would have to take place before 1995 in order for Marin's share of the regional housing needs to be met. It is highly unlikely that this level of development would occur during such a short time period with a water moratorium. Moreover, the units built under the Capacity Constrained Alternative would be more expensive, larger, and less densely clustered, making it highly likely that these units would be affordable only to the most affluent persons and families.

### 3.5 ENVIRONMENTAL HAZARDS IMPACTS

There are four environmental hazards discussed in the Environmental Hazards Element: geologic, fire, flood, and seismic. The following discussion summarizes how each of the land use alternatives may or may not change the risk from these hazards.

#### 3.5.1 Uses of Land in Hazard Areas

The use of land in hazard areas has been addressed primarily through zoning and development restrictions. Much of the risk from environmental hazards is borne by structures built prior to engineering improvements and stringent building codes. Although growth under existing plans and policies will necessarily subject more people and property to environmental hazards, policies and engineering practices can reduce the risk to a minimum.

The Constrained Capacity Alternative would subject fewer people in Southern Marin to environmental hazards than other alternatives because development would be limited there. However, growth in Northern Marin would continue, and this could put pressure to develop on flood prone areas in Novato. These areas may be subject to liquefaction in the event of an earthquake.

The Pedestrian Pockets Alternative would shift development from multiple sites onto a single, smaller pocket site. The higher density structures may pose a greater fire risk than low density structures. This risk can be addressed through requirements for fire retardant building materials, adequate fire suppression personnel and equipment, and sprinkler systems. In addition, if development on pocket sites is located on fill material, there may be a greater risk from seismic activity than for the other alternatives. However, this risk can be reduced to insignificance through a soils evaluation at the time of development on construction requirements to deal with soil conditions. This is already required by the Marin Countywide Plan and County Code.

The Public Acquisition Alternative would eliminate potential development on selected sites. Fewer people would be subjected to environmental hazards than with all the other alternatives.





### 3.5.2 Opportunities for Hazard Reduction

Reducing geologic, seismic, flood, and fire hazards in the unincorporated portion of the county is accomplished through the policies of the Countywide Plan, Zoning Ordinance, Uniform Building Code, and Fire Code. In areas of particular risk, such as the 100-year flood plain, there are special requirements or restrictions. In other identified areas, such as the Alquist/Priolo Special Studies Zone, site specific engineering reports must be prepared which mitigate the risk from seismic activity. Hazard reduction is best accomplished through appropriate zoning, local land use policies, and implementation of Federal and State regulations.

Potentially significant effects can be mitigated through policies and programs contained in the proposed Environmental Hazards Element of the Countywide Plan. Implementation of a preferred alternative will not require modification of the policies and programs contained in the Countywide Plan.

### 3.6 TRAILS IMPACTS

The Trails Element identifies existing trails and proposes new trails to be acquired by purchase or as a condition of development. Most of the existing and proposed trail easements are on lands west of Highway 101 and outside of established city boundaries. Since all of the land use alternatives focus development within the City-Centered Corridor, the alternatives will have little impact on trails.

The only potential impact on trails might occur along the Northwestern Pacific Railroad right-of-way east of Highway 101 between San Rafael and Novato. The proposed trail alignment runs along the railroad track, which would be used for a light rail line under all of the alternatives. If the rail line is implemented, then portions of the proposed trail may need to be relocated. No other proposed trails would be affected by the development outlined in the land use alternatives.



### 3.7 COMMUNITY FACILITIES IMPACTS

#### 3.7.1 Sewers

There are eight sewage treatment plants in Marin County operated by the following Districts: Sausalito/Marin City, Sewerage Agency of Southern Marin, Sanitary District #5, Central Marin Sanitation Agency, Las Gallinas Sanitary District, Novato Sanitation District, and Bolinas Public Utility District. The Bolinas Public Utility District has adequate sewer capacity, so this district will not be discussed further in this section. In addition, Sanitary District #5 appears to have adequate capacity to accommodate buildout under the Local Policy Alternative, the alternative with the largest volume of potential development, and will not be discussed further.

Growth under all of the land use alternatives would require expansion of some of the existing sewage treatment plants. The following discussion presents a summary of the impact of each of these alternatives on sewage treatment facilities.

Only the impact on sewage treatment plants has been evaluated. It is assumed that new development combined with fees will pay for expansion and repairs of collection systems. The costs are estimated based on a very generalized model developed by the Bureau of Economic and Business Research at the University of Florida. The model calculates the cost of a new facility (secondary treatment), rather than a plant expansion. Cost estimates include construction, administrative, legal, architectural and engineering fees, contingency and planning. The cost estimates are in 1986 dollars. These estimates should be used only to compare the relative differences between alternatives and not to calculate the cost of specific facilities in Marin. Tables 20 and 21 on the following page show the additional capacity and costs for the land use alternatives.



TABLE 20

**ADDITIONAL SANITARY CAPACITY NEEDED FOR LAND USE ALTERNATIVES**  
(Million Gallons per Day)

Sanitary District	Local Policy	Constrained Capacity	Increased Housing	Pedestrian Pocket	Public Acquisition	Reduced Jobs
Sausalito/Marin City	0.20	0.05	0.20	0.20	0.20	0.20
CMSA	3.03	1.13	2.91	3.03	3.03	2.55
SASM	0.62	0.16	0.57	0.62	0.62	0.62
Las Gallinas	1.83	0.50	1.77	1.83	1.24	1.07
Novato	4.51	3.08	4.51	4.51	2.55	2.78

NOTE: The additional capacity needed was calculated by using per capita multipliers, and took into consideration the amount of capacity left in the plant. These figures should only be used to compare between alternatives and should not be considered in planning for new or expanded plant facilities.

Source: Marin County Planning Department, 1990

TABLE 21

**ESTIMATED RELATIVE COST OF EXPANSIONS TO SANITARY FACILITIES FOR LAND USE ALTERNATIVES**

Sanitary District	Local Policy	Constrained Capacity	Increased Housing	Pedestrian Pockets	Public Acquisition	Reduced Jobs
Sausalito/Marin City	950,000	325,000	\$950,000	\$950,000	\$950,000	\$950,000
CMSA	\$6,700,000	\$3,270,000	\$6,500,000	\$6,700,000	\$6,700,000	\$6,000,000
SASM	\$2,150,000	\$815,000	\$2,000,000	\$2,150,000	\$2,150,000	\$2,150,000
Las Gallinas	\$5,000,000	\$1,805,000	\$4,550,000	\$5,000,000	\$3,500,000	\$3,150,000
Novato	<u>\$8,900,000</u>	<u>\$6,750,000</u>	<u>\$8,400,000</u>	<u>\$8,900,000</u>	<u>\$5,900,000</u>	<u>\$6,250,000</u>
TOTAL	\$23,700,000	\$12,965,000	\$22,400,000	\$23,700,000	\$19,200,000	\$18,500,000

1. These cost estimates were calculated using a model developed at the University of Florida. The results of this model are based on statistical averages for the nation which have been adjusted for regional cost variations. They do not reflect site specific conditions, which could significantly change the cost of a particular project. These cost figures should be used only to compare the relative differences between alternatives and do not represent actual estimates.

Source: Marin County Planning Department, 1990





Under the Local Policy and Pedestrian Pocket alternatives, the Sausalito/Marin City Sanitary District might require a minor plant expansion to accommodate an additional 0.20 million gallons per day. However, the District's consulting engineers believe the plant may have additional capacity and an expansion may not be necessary. A new treatment plant would cost approximately \$950,000, and expansion, if needed, could cost considerably less.

The Central Marin Sanitation Agency would need to expand the treatment plant to accommodate growth under the Pedestrian Pocket and Local Policy alternatives. The cost of building a new treatment plant would be approximately \$6,700,000. The Sewerage Agency of Southern Marin might have to expand its plant to accommodate buildout under these two alternatives. This would be a minor plant expansion and the cost would probably be less than \$2,150,000. The Las Gallinas Sanitary District would need to expand the treatment plant to accommodate an additional 1.83 million gallons per day. This expansion could cost between \$5 million and \$10 million. The Novato Sanitary District would need to accommodate 4.51 million gallons per day more than the current plant capacity. A new treatment plant designed to accommodate this additional wastewater flow would cost approximately \$8,900,000.

The Capacity Constrained Alternative would have the least impact on sewer systems. In Southern Marin, the Central Marin Sanitation Agency and the Sewerage Agency of Southern Marin might need minor plant expansion. The other treatment plants in Southern Marin may be able to accommodate buildout under this alternative. The Novato Sanitary District would almost certainly need to expand the treatment plant at a cost of approximately \$6,750,000. This alternative may be growth-inducing in the Novato area, and may hasten the need to expand the Novato treatment plant and the Ignacio treatment plant.

The Increased Housing Alternative would shift development from jobs to housing. The impact on each sewage district would be virtually the same as with the Local Policy Alternative.

The Public Acquisition Alternative would affect only the Las Gallinas Valley Sanitary District and the Novato Sanitary District. In the Las Gallinas Valley Sanitary District, wastewater flow which could not be accommodated by the existing treatment plant would be 1.24 million gallons per day, and the cost of building a new facility would be approximately \$3,500,000. The Public Acquisition Alternative would remove development potential from the Novato area, and, compared to the Local Policy Alternative, would substantially reduce the amount of wastewater flow. An additional 2.55 million gallons per day would need to be treated. The cost of a new treatment plant for the Novato Sanitary District would be approximately \$5,900,000.



The Reduced Jobs Alternative would affect the Central Marin Sanitation Agency (CMSA), the Novato Sanitary District, and the Las Gallinas Valley Sanitary District. The effect on the CMSA would be to reduce the wastewater flows compared to the Local Policy Alternative. A treatment facility would need to accommodate 2.55 million gallons per day at a cost of approximately \$6,000,000. The Novato Sanitary District would need to expand to accommodate an additional 2.78 million gallons per day. This is similar to wastewater flows expected under the Public Acquisition Alternative. The Las Gallinas Valley Sanitary District would need to expand to accommodate 1.07 million gallons per day at a cost of approximately \$3,150,000.

### **3.7.2 Water**

Water is supplied by the following water districts: Marin Municipal Water District, North Marin Water District, Stinson Beach County Water District, Bolinas Public Utility District and the Inverness Public Utility District.

There is a moratorium on new water hookups within the Marin Municipal District; thus, any growth in this service area would require additional water supply. The cost of developing supplemental supply could be as much as \$60 million, according to recent reports from the Marin Municipal Water District.

All of the alternatives, with the exception of the Capacity Constrained Alternative, would require a supplemental water supply for the Marin Municipal District. The Capacity Constrained Alternative assumes that additional water would not be obtained; growth would be limited in Southern and Central Marin.

The North Marin Water District currently has adequate water capacity. The District projects that it will need an additional 6,500 acre-feet of water by 2010. The District is currently negotiating with the Sonoma County Water Agency for this water.

### **3.7.3 Schools**

School facilities in Marin should be able to accommodate buildout under the Local Policy Alternative if closed schools are re-opened. In some instances it may be necessary to add space to existing school. The Capacity Constrained Alternative would reduce demand for schools in Southern Marin and perhaps induce more rapid development in Novato. The Housing Alternative would probably increase the need for school facilities beyond what would occur under the Local Policy Alternative due to the larger population the alternative would generate. Any building additions required by the Housing Alternative could be paid for by development fees. The Public Acquisition Alternative may result in fewer school children than the Local Policy Alternative, but this is insignificant since no new schools are planned under the Local Policy Alternative. The Pedestrian Pocket Alternative and the Reduced Jobs Alternative would have nearly the same impact on schools as the Local Policy Alternative.

### **3.7.4 Public Safety**

The impact on police and fire services would be very similar for all the land use alternatives. The Pedestrian Pocket Alternative might result in the need to relocate fire stations. Buildout under all of the alternatives would require additional space, personnel and equipment.





### 3.8 PARK AND RECREATION IMPACTS

Impacts of the land use alternatives on parks and recreation might occur if development were proposed for a site designated as a park or recreation area, or if increases in the population under an alternative created additional need for parks.

The different population levels proposed in the alternatives would impact the demand for developed parks and active recreational areas, as distinct from Marin's land area devoted to national and state parks and recreational areas (including Pt. Reyes National Seashore, the Golden Gate National Recreation Area, Tomales Bay State Park, Muir Woods National Monument, and Samuel P. Taylor State Park).

As of 1987, Marin had 715.9 acres of active recreational park facilities, including school play yards. The county had an adequate number of active recreation areas for the size of the population, assuming a ratio of 3.2 acres of parks per 1,000 people. In order to maintain the same county-wide ratio of park acres to residents, additional developed parks would be needed. The amount of park acres required for each alternative is shown below:

TABLE 22

#### ADDITIONAL ACRES OF DEVELOPED PARK NEEDED FOR LAND USE ALTERNATIVES

Land Use Alternative	Population	Additional Acres Needed
Local Policy	268,557	142.48
Constrained Capacity	237,864	45.26
Increased Housing	292,236	219.26
Pedestrian Pocket	268,557	143.48
Public Acquisition	258,947	112.73
Reduced Jobs	268,557	142.46

Source: Marin County Planning Department, 1990







## APPENDICES

1. Detailed Description of the Land Use Alternatives
2. Fiscal Impact Analysis
3. Transportation Alternatives





## APPENDIX 1

### DETAILED DESCRIPTION OF THE LAND USE ALTERNATIVES

The Land Use Alternatives Report discusses six Countywide Plan land use scenarios. The first alternative, Local Policy, is a projection of development based on the approved general plans of the County and each city. The other alternatives are variations on this projection. The alternative with the highest level of population growth is the Increased Housing Alternative which would have, at buildout (the theoretical point where all developable land has been developed), 292,236 people as opposed to 268,557 in the Local Policy Alternative. Job growth would be highest with the Local Policy and Pedestrian Pockets alternatives. Jobs would grow from 88,214 in 1987 to 150,520. The following discussion reviews the assumptions, the location, and the extent of development represented by each alternative.

TABLE 1

#### SUMMARY OF ALTERNATIVES: HOUSING AND POPULATION BY PLANNING AREA

LAND USE ALTERNATIVE	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change
1. Local Policy	96,342	123,692	28.4%	223,774	268,557	20.0%
2. Constrained Capacity	96,342	108,661	12.8%	223,774	237,864	6.3%
3. Increased Housing	96,342	134,235	39.3%	223,774	292,236	30.6%
5. Pedestrian Pockets	96,342	123,692	28.4%	223,774	268,557	20.0%
4. Public Acquisition	96,342	119,308	23.8%	223,774	258,947	15.7%
6. Reduced Jobs	96,342	123,692	28.4%	223,774	268,557	20.0%

Source: Marin County Planning Department, 1990

TABLE 2

#### SUMMARY OF ALTERNATIVES: COMMERCIAL SQUARE FOOTAGE AND JOBS BY PLANNING AREA

	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change
1. Local Policy	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
2. Constrained Capacity	24,939,890	36,838,757	47.7%	88,214	125,179	41.3%
3. Increased Housing	24,939,890	33,096,989	32.7%	88,214	116,063	31.6%
4. Pedestrian Pockets	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%
5. Public Acquisition	24,939,890	39,442,090	58.1%	88,214	133,780	51.7%
6. Reduced Jobs	24,939,890	37,477,292	50.3%	88,214	129,072	46.3%

Source: Marin County Planning Department, 1990



FIGURE 1

## Countywide Plan Alternatives SUMMARY

Alt 1 = Local Policy

Alt 4 = Pedestrian Pockets

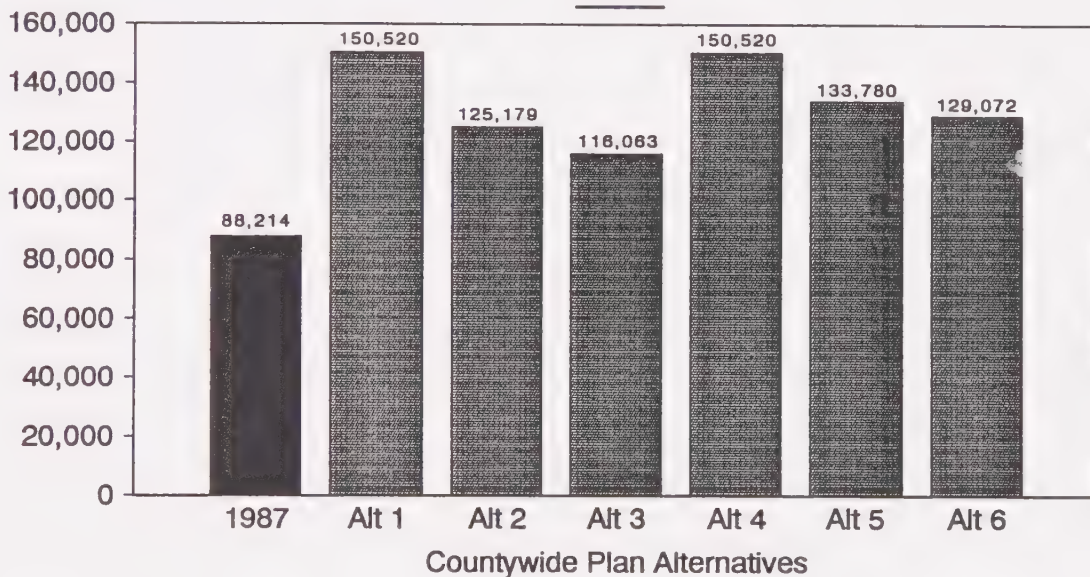
Alt 2 = Constrained Capacity

Alt 5 = Public Acquisition

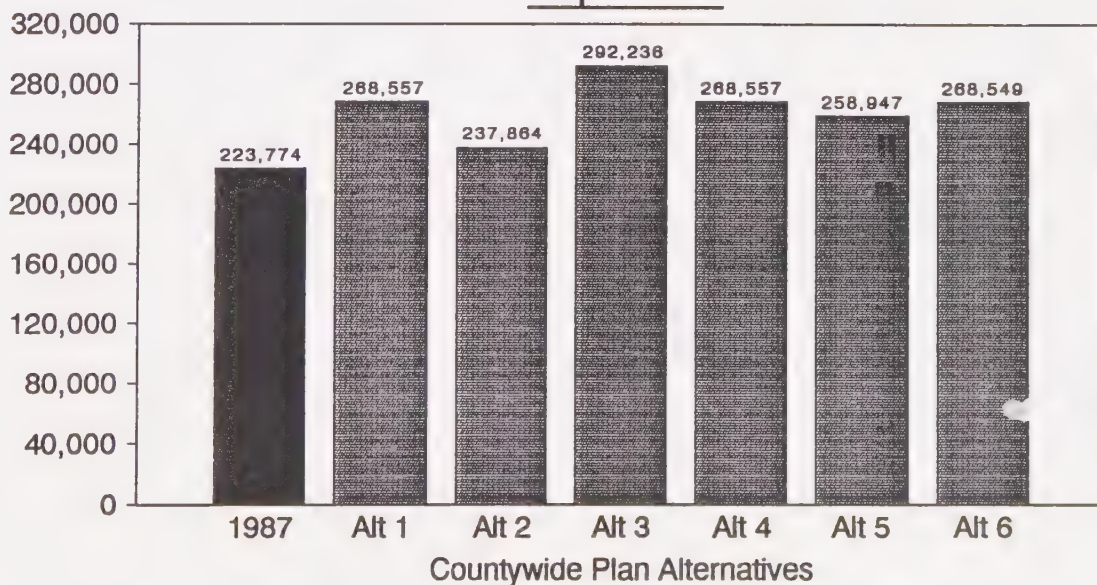
Alt 3 = Housing Alternative

Alt 6 = Reduced Jobs

### Jobs



### Population







## 1.1 ALTERNATIVE 1: LOCAL POLICY

### 1.1.1 Assumptions

The Local Policy Alternative assumes that the amount of development allowable under 1987/88 County and city plans would remain unchanged. County totals for population, households, and jobs are very similar to the projections made by the Association of Bay Area Governments for the year 2010.

### 1.1.2 Location and Extent of Development

Growth under the Local Policy Alternative would occur mostly in the Novato and San Rafael planning areas. The alternative shows jobs increasing by 71% and population by 20% compared to 1987 conditions. In the Novato planning area, jobs would increase by 224% and population by 31%. In Las Gallinas Valley, jobs would grow by 44% and population by 34%. The San Rafael Planning Area would add 62% more jobs and 15% more people. West Marin would add 21% more jobs and have a 76% increase in population.

TABLE 3

#### LOCAL POLICY BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	27,523	41.3%	52,406	68,605	30.9%	29,889	2.30
Las Gallinas	10,640	16,262	52.8%	27,321	36,653	34.2%	13,772	2.66
San Rafael	14,687	18,426	25.5%	31,160	35,862	15.1%	7,794	4.60
Upper Ross	10,479	11,609	10.8%	23,918	24,511	2.5%	9,397	2.61
Lower Ross	12,217	14,037	14.9%	29,663	31,511	6.2%	7,402	4.26
Richardson Bay	23,404	26,693	14.1%	48,077	51,633	7.4%	11,439	4.51
West Marin	<u>5,434</u>	<u>9,142</u>	<u>68.2%</u>	<u>11,229</u>	<u>19,782</u>	<u>76.2%</u>	<u>258,505</u>	<u>0.08</u>
TOTAL	96,342	123,692	28.4%	223,774	268,557	20.0%	338,198	0.79

Source: Marin County Planning Department, 1990

TABLE 4

#### LOCAL POLICY BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

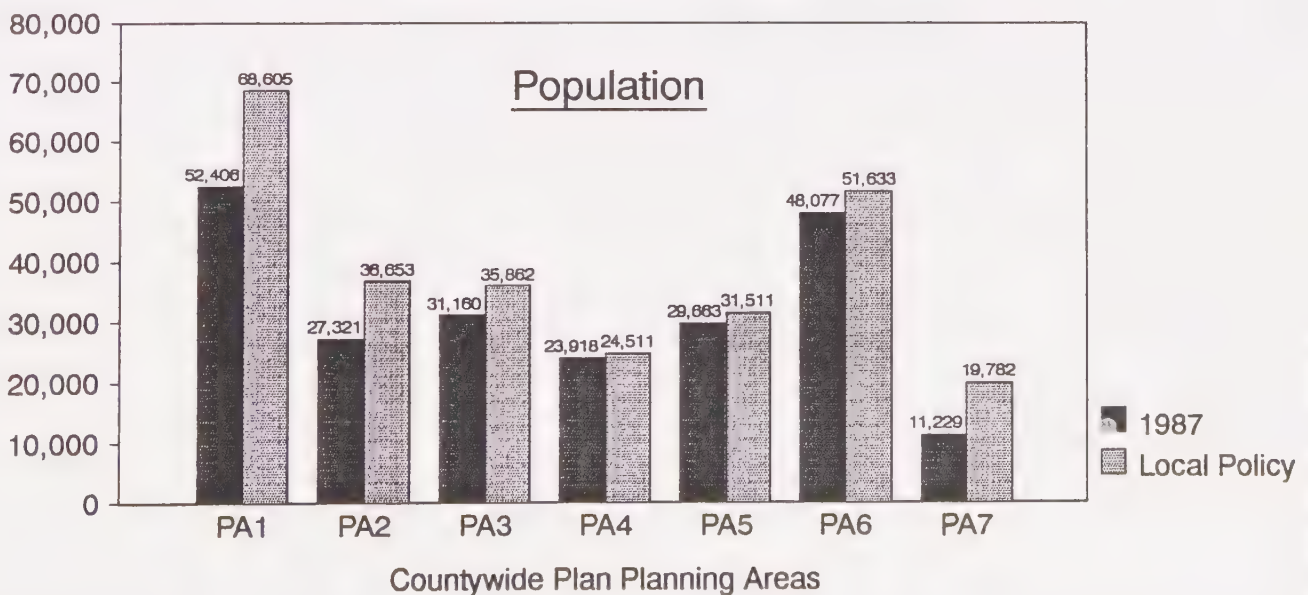
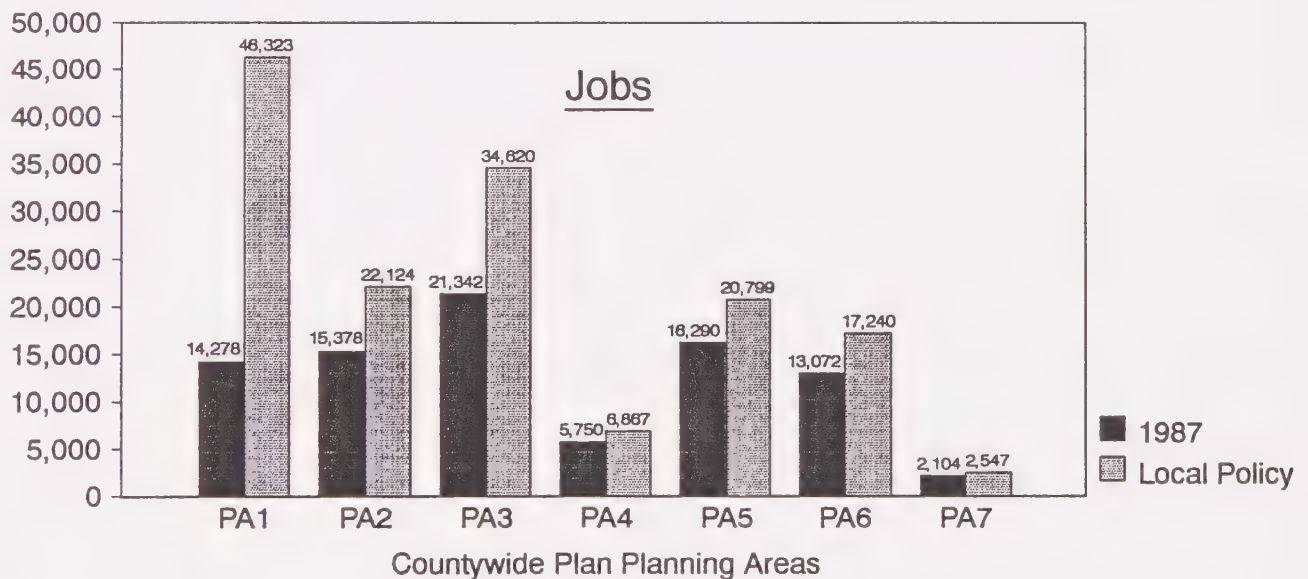
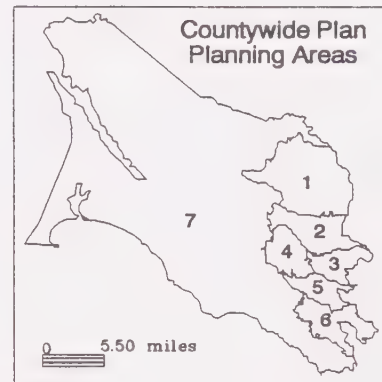
Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	14,266,664	208.8%	14,278	46,323	224.4%	29,889	1.55
Las Gallinas	3,339,297	5,449,504	63.2%	15,378	22,124	43.9%	13,772	1.61
San Rafael	7,673,557	11,873,392	54.7%	21,342	34,620	62.2%	7,794	4.44
Upper Ross	1,300,619	1,623,208	24.8%	5,750	6,867	19.4%	9,397	0.73
Lower Ross	3,538,866	4,803,254	35.7%	16,290	20,799	27.7%	7,402	2.81
Richardson Bay	3,708,568	5,095,044	37.4%	13,072	17,240	31.9%	11,439	1.51
West Marin	<u>758,365</u>	<u>860,224</u>	<u>13.4%</u>	<u>2,104</u>	<u>2,547</u>	<u>21.1%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%	338,198	0.45

Source: Marin County Planning Department, 1990



FIGURE 2

# Alternative 1 Local Policy





## **1.2 ALTERNATIVE 2: CONSTRAINED WATER/SEWER CAPACITY**

### **1.2.1 Assumptions**

The Constrained Capacity Alternative assumes that the Marin Municipal Water District and the Las Gallinas Valley Sanitary District would not expand their capacity. Proposed development in City-Centered Corridor served by these two districts has been cut by 85% to reflect capacity constraints. The North Marin Water District has nearly enough capacity to serve the development proposed for the Novato Planning Area (with the exception of Hamilton Field which would be served by Marin Municipal). The Novato Sanitary District is now preparing to expand their plant to accommodate much of Novato's potential development. Development potential in the Novato area would only be reduced by 2% under the Constrained Capacity Alternative.

West Marin development levels under the Constrained Capacity Alternative remain identical to those under the Local Policy Alternative, with the exception of San Geronimo Valley and Bolinas. Bolinas' water shortage would eliminate all potential development in this area. Because the Marin Municipal Water District provides water to the San Geronimo area, San Geronimo development has been reduced 85% under this alternative.

The Constrained Capacity Alternative allows some minimal amount of development on each parcel. Commercially zoned parcels would have a minimum floor area ratio of .18 for parcels with less than 20,000 square feet of development potential.

### **1.2.2 Location and Extent of Development Under the Constrained Capacity Alternative**

Population would grow by only 6.3% and jobs by 41.3% countywide under this alternative, far less than the 20% population growth and 70% job growth under the Local Policy Alternative. The largest share of this growth would be in the Novato Planning Area, where development is constrained by just 2%. The Novato area population would grow by 23% and jobs by 142% under this alternative. Las Gallinas Valley population would grow by 2% and jobs by 23%. Due to a projected decrease in the number of individuals living in each housing unit, the population in planning areas three through six is projected to decline under this alternative, although some job growth would occur.









TABLE 5

## CONSTRAINED CAPACITY BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	25,929	33.1%	52,406	64,394	22.9%	29,889	2.15
Las Gallinas	10,640	11,932	12.1%	27,321	27,918	2.2%	13,772	2.03
San Rafael	14,687	15,568	6.0%	31,160	30,551	-2.0%	7,794	3.92
Upper Ross	10,479	10,827	3.3%	23,918	22,915	-4.2%	9,397	2.44
Lower Ross	12,217	12,736	4.3%	29,663	28,843	-2.8%	7,402	3.90
Richardson Bay	23,404	24,487	4.6%	48,077	47,382	-1.4%	11,439	4.14
West Marin	<u>5,434</u>	<u>7,182</u>	<u>32.2%</u>	<u>11,229</u>	<u>15,861</u>	<u>41.3%</u>	<u>258,505</u>	<u>0.06</u>
TOTAL	96,342	108,661	12.8%	223,774	237,864	6.3%	338,198	0.70

Source: Marin County Planning Department, 1990

TABLE 6

## CONSTRAINED CAPACITY BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	11,370,275	146.1%	14,278	34,515	141.7%	29,889	1.15
Las Gallinas	3,339,297	4,570,679	36.9%	15,378	18,917	23.0%	13,772	1.37
San Rafael	7,673,557	9,627,794	25.5%	21,342	27,587	29.3%	7,794	3.54
Upper Ross	1,300,619	1,471,677	13.2%	5,750	6,297	9.5%	9,397	0.67
Lower Ross	3,538,866	4,452,065	25.8%	16,290	19,876	22.0%	7,402	2.69
Richardson Bay	3,708,568	4,494,207	21.2%	13,072	15,480	18.4%	11,439	1.35
West Marin	<u>758,365</u>	<u>852,060</u>	<u>12.4%</u>	<u>2,104</u>	<u>2,507</u>	<u>2.3%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	36,838,757	47.7%	88,241	125,179	41.3%	338,198	0.37

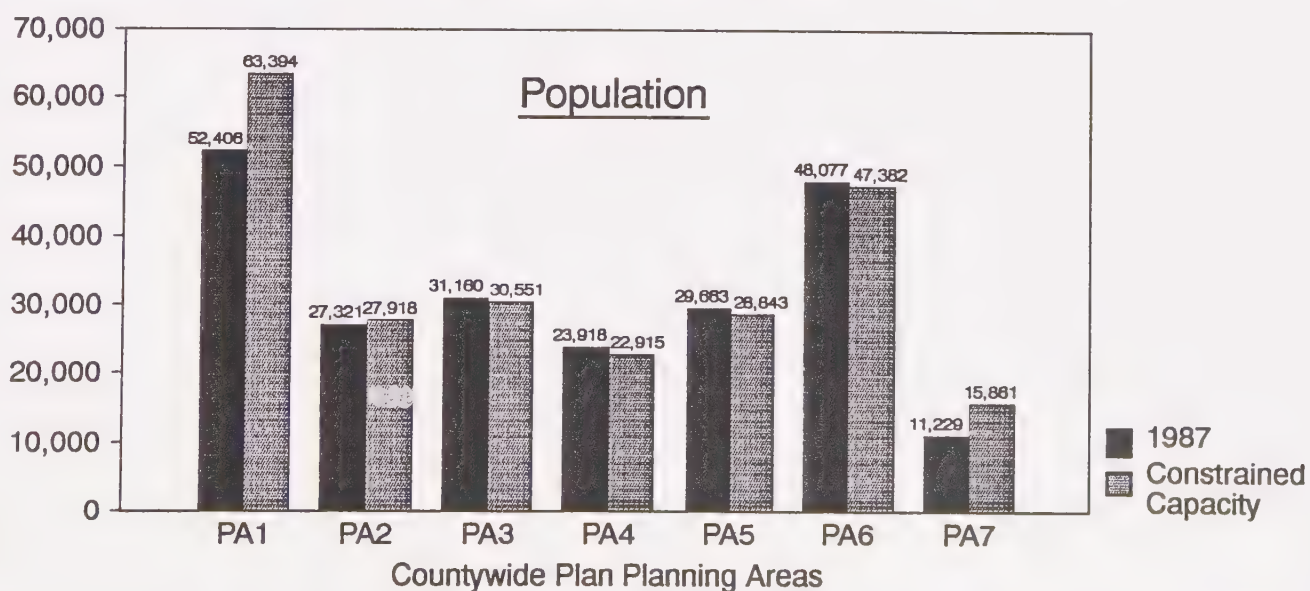
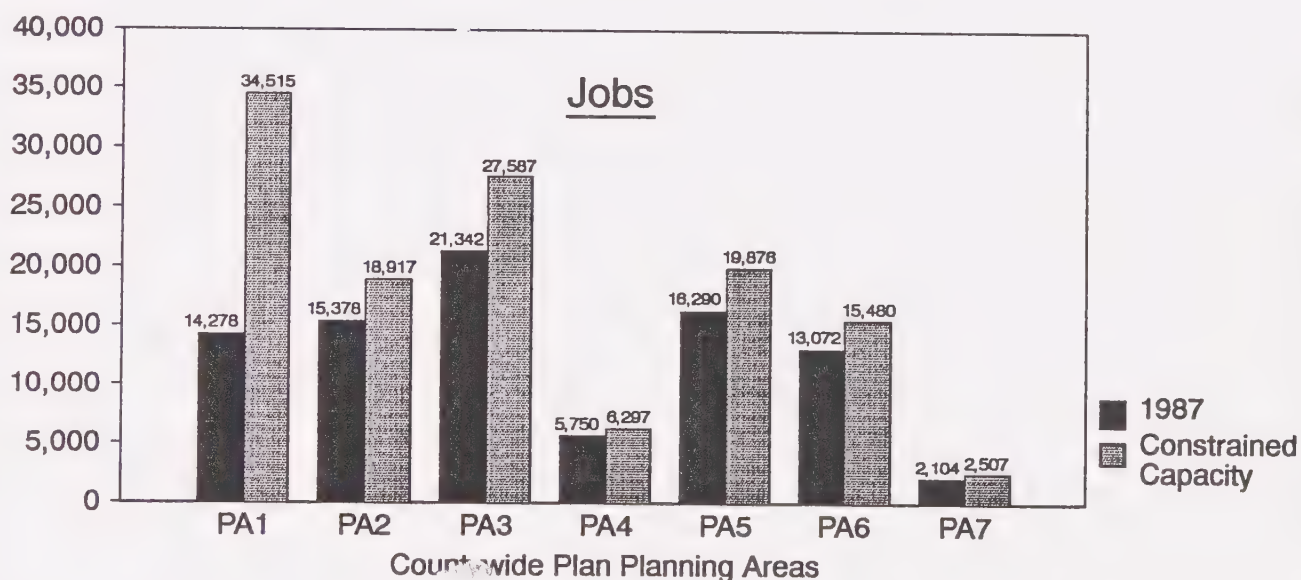
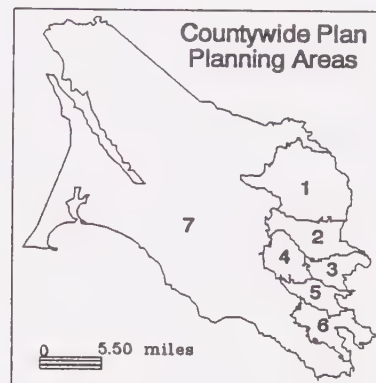
Source: Marin County Planning Department, 1990





FIGURE 3

# Alternative 2 Constrained Capacity





## **1.3 ALTERNATIVE 3: INCREASED HOUSING ALTERNATIVE**

### **1.3.1 Assumptions**

The Increased Housing Alternative transfers 70% of proposed commercial space into housing, increasing the supply of housing beyond the amount currently allowed. This alternative is intended to test whether increasing housing more than jobs would bring about a better jobs/housing balance, reduce commuting and ease traffic congestion. Seventy percent of the designated commercial development potential under the Local Policy Alternative would be transferred to housing. Much of the new housing development would occur in mixed use areas where housing would be built on land currently zoned for commercial activities. This alternative assumes that one thousand commercial square feet would be converted to one housing unit.

### **1.3.2 Location and Extent of Development**

The Housing Alternative would increase the population by as little as 3.7% in the Upper Ross Valley Planning Area to as much as 61% in Novato over 1987 conditions. Development activity would be concentrated in the Novato and San Rafael areas. In Novato, jobs would grow by 79% and population by 61%. Population in the Las Gallinas Valley Planning Area would grow by 40% and jobs by 26%. San Rafael Area population would grow by 28% and jobs by 27%.









TABLE 7

## INCREASED HOUSING BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	33,771	73.4%	52,406	84,496	61.2%	29,889	2.83
Las Gallinas	10,640	17,071	60.4%	27,321	38,239	40.0%	13,772	2.78
San Rafael	14,687	20,749	41.3%	31,160	39,804	27.7%	7,794	5.11
Upper Ross	10,479	11,764	12.3%	23,918	24,802	3.7%	9,397	2.64
Lower Ross	12,217	14,400	17.9%	29,663	32,293	8.9%	7,402	4.36
Richardson Bay	23,404	27,285	16.6%	48,077	52,710	9.6%	11,439	4.61
West Marin	<u>5,434</u>	<u>9,195</u>	<u>69.2%</u>	<u>11,229</u>	<u>19,892</u>	<u>77.1%</u>	<u>258,505</u>	<u>0.08</u>
TOTAL	96,342	134,235	39.3%	223,774	292,236	30.6%	338,198	0.86

Source: Marin County Planning Department, 1990

TABLE 8

## INCREASED HOUSING BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

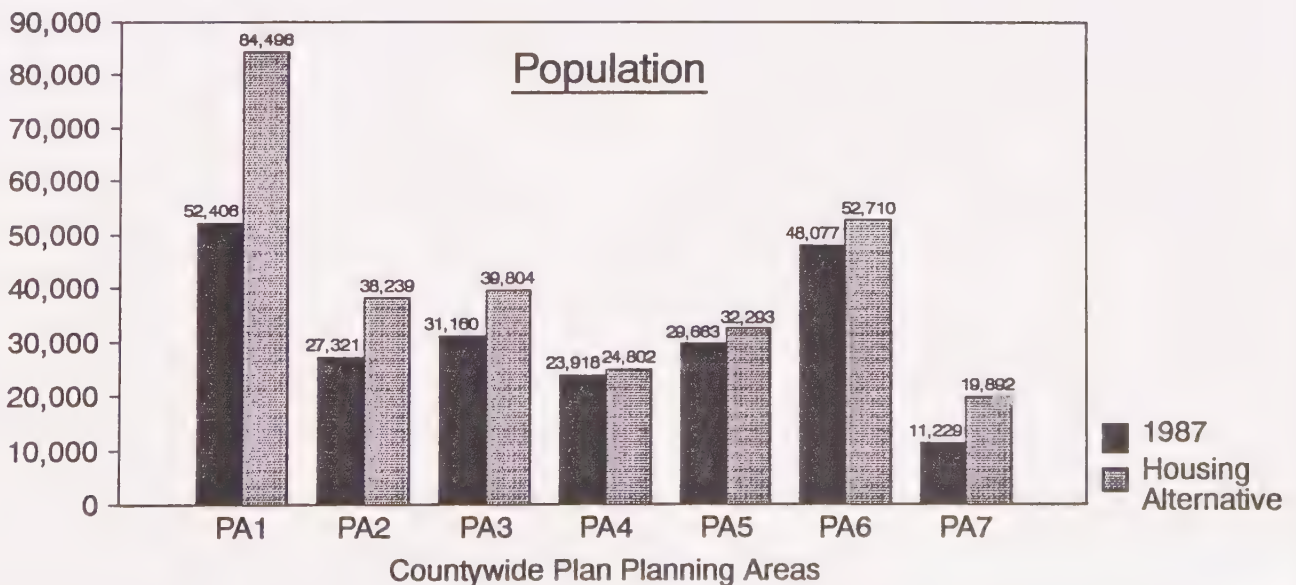
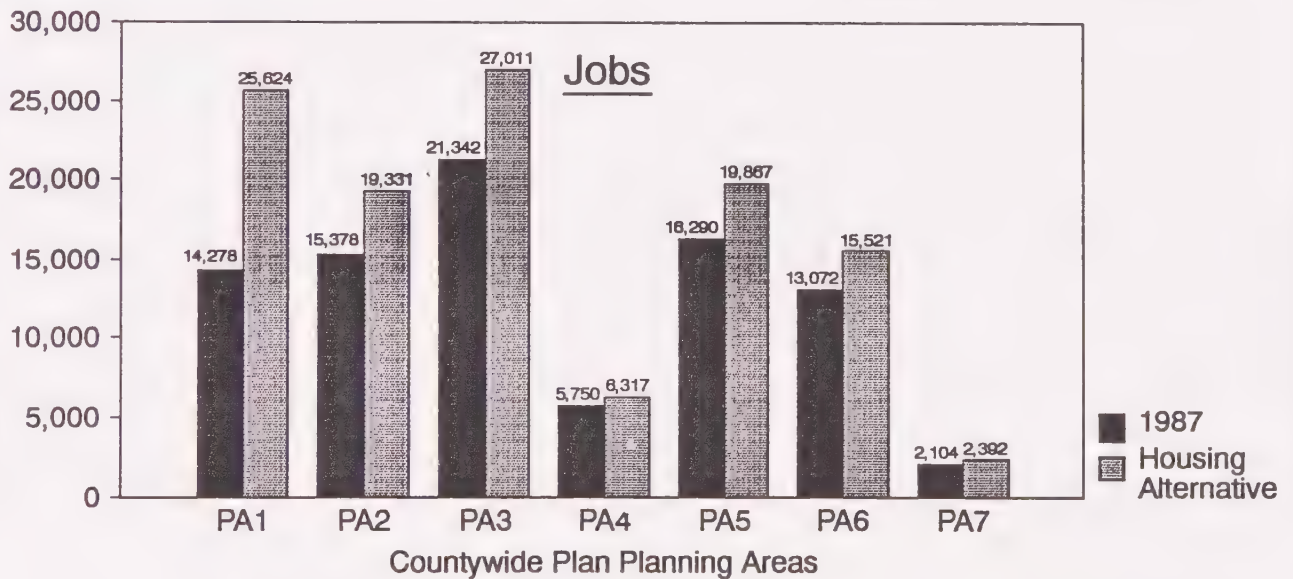
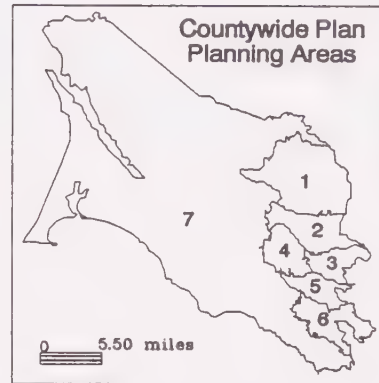
Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	7,906,942	71.1%	14,278	25,624	79.5%	29,889	0.86
Las Gallinas	3,339,297	4,637,081	38.9%	15,378	19,331	25.7%	13,772	1.40
San Rafael	7,673,557	9,399,604	22.5%	21,342	27,011	26.6%	7,794	3.47
Upper Ross	1,300,619	1,469,329	13.0%	5,750	6,317	9.9%	9,397	0.67
Lower Ross	3,538,866	4,427,984	25.1%	16,290	19,867	22.0%	7,402	2.68
Richardson Bay	3,708,568	4,463,520	20.4%	13,072	15,521	18.7%	11,439	1.36
West Marin	<u>758,365</u>	<u>792,520</u>	<u>4.5%</u>	<u>2,104</u>	<u>2,392</u>	<u>13.7%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	33,096,989	32.7%	88,214	116,063	31.6%	338,198	0.34

Source: Marin County Planning Department, 1990



FIGURE 4

# Alternative 3 Housing Alternative







## **1.4 ALTERNATIVE 4: PEDESTRIAN POCKETS**

### **1.4.1 Assumptions**

The Pedestrian Pocket Alternative tests whether concentrating development within 1/4 mile of transit stations along the Northwestern Pacific right-of-way can significantly reduce congestion on Highway 101 and increase transit use. The Pocket Alternative adds development to three sites: downtown Novato, Hamilton Field, and St. Vincent's/Silveira. The development potential added to these sites has been removed from nearby areas further than 1/4 mile from the transit stations. The total volume of development in the Pocket Alternative is equal to the total volume of development in the Local Policy Alternative. Although the Pedestrian Pocket Alternative shifts development potential from one area to another, the level of development within planning areas is identical to that in the Local Policy Alternative.

### **1.4.2 Location and Extent of Development**

The Pedestrian Pocket Alternative would result in an overall 28% growth in housing and 20% growth in population in the county over 1987 conditions. These percentages are identical to the growth under the Local Policy Alternative.

Commercial space and job growth under the Pedestrian Pocket Alternative would generate a 76% overall increase in commercial space, most of it concentrated in the Novato Planning Area. The countywide increase in jobs would be 70%, concentrated in the Novato area.







TABLE 9

## PEDESTRIAN POCKETS BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	27,523	41.3%	52,406	68,605	30.9%	29,889	2.30
Las Gallinas	10,640	16,262	52.8%	27,321	36,653	34.2%	13,772	2.66
San Rafael	14,687	18,426	25.5%	31,160	35,862	15.1%	7,794	4.60
Upper Ross	10,479	11,609	10.8%	23,918	24,511	2.5%	9,397	2.61
Lower Ross	12,217	14,037	14.9%	29,663	31,511	6.2%	7,402	4.26
Richardson Bay	23,404	26,693	14.1%	48,077	51,633	7.4%	11,439	4.51
West Marin	<u>5,434</u>	<u>9,142</u>	<u>68.2%</u>	<u>11,229</u>	<u>19,782</u>	<u>76.2%</u>	<u>258,505</u>	<u>0.08</u>
TOTAL	96,342	123,692	28.4%	223,774	268,557	20.0%	338,198	0.79

Source: Marin County Planning Department, 1990

TABLE 10

## PEDESTRIAN POCKETS BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	14,266,664	208.8%	14,278	46,323	224.4%	29,889	1.55
Las Gallinas	3,339,297	5,449,504	63.2%	15,378	22,124	43.9%	13,772	1.61
San Rafael	7,673,557	11,873,392	54.7%	21,342	34,620	62.2%	7,794	4.44
Upper Ross	1,300,619	1,623,208	24.8%	5,750	6,867	19.4%	9,397	0.73
Lower Ross	3,538,866	4,803,254	35.7%	16,290	20,799	27.7%	7,402	2.81
Richardson Bay	3,708,568	5,095,044	37.4%	13,072	17,240	31.9%	11,439	1.51
West Marin	<u>758,365</u>	<u>860,224</u>	<u>13.4%</u>	<u>2,104</u>	<u>2,547</u>	<u>21.1%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	43,971,290	76.3%	88,214	150,520	70.6%	338,198	0.45

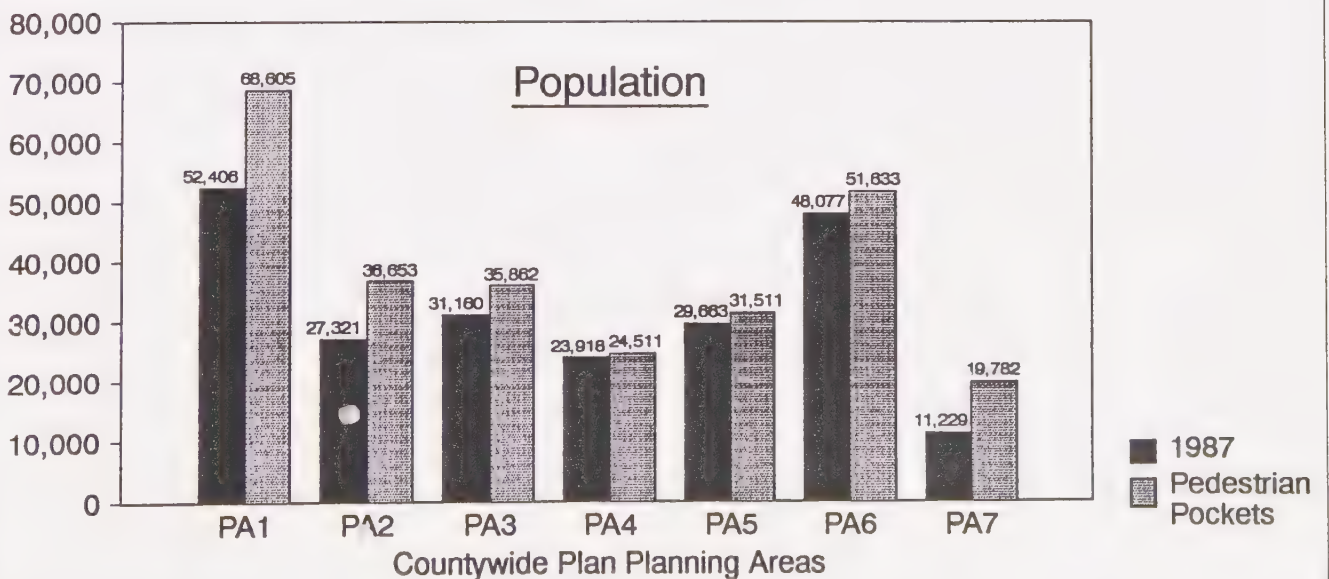
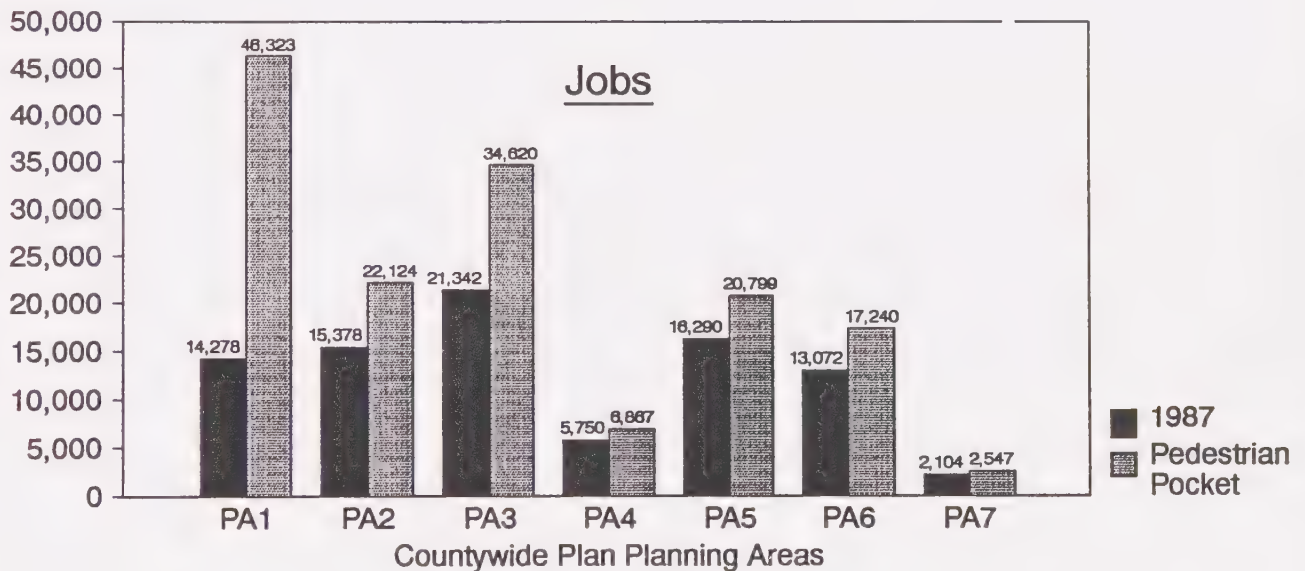
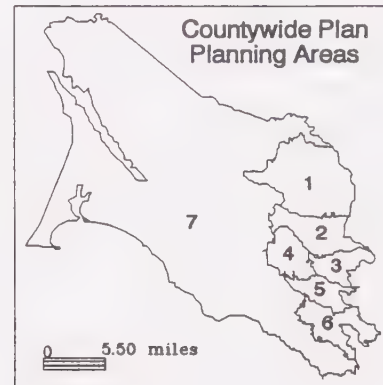
Source: Marin County Planning Department, 1990





FIGURE 5

# Alternative 4 Pedestrian Pockets





## **1.5 ALTERNATIVE 5: PUBLIC ACQUISITION**

### **1.5.1 Assumptions**

The Public Acquisition Alternative assumes that a number of large undeveloped sites in the City-Centered Corridor would be publicly acquired and the land retained as open space. The sites proposed for acquisition include St. Vincent's/Silveira, Hamilton AFB, Bel Marin Keys and the developable lands north of the City of Novato including the Gness Field area. The purpose of this alternative is to consider the impacts of reducing job and housing growth in the City-Centered Corridor on the need to expand transportation system capacity as proposed in the Marin Sales Tax Expenditure Plan.

### **1.5.2 Location and Extent of Development**

The number of housing units countywide would grow by 24% and population by 15% under this alternative, as compared to a 28% growth in housing and a 20% growth in population under the Local Policy Alternative. The distribution of growth in the Central, Southern, and West Marin planning areas would be identical to that under the Local Policy Alternative.

Commercial and residential growth is reduced in planning areas where developable land is proposed for acquisition. The Novato Planning Area would add 2,000 fewer units and 4 million square feet less commercial space than under the Local Policy Alternative. The Las Gallinas Valley Planning Area would have 2,000 fewer units of housing and 361,000 fewer commercial square feet than under the Local Policy Alternative. These planning areas would continue to grow under this alternative, however. The Novato Planning area would add 21% more people and 107% more jobs than existed in 1987. The Las Gallinas Valley Planning Area would add 17% more people and 43% more jobs.









TABLE 11

## PUBLIC ACQUISITION BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	25,516	31.0%	52,406	63,538	21.2%	29,889	2.13
Las Gallinas	10,640	13,885	30.5%	27,321	32,111	17.5%	13,772	2.33
San Rafael	14,687	18,426	25.5%	31,160	35,861	15.1%	7,794	4.60
Upper Ross	10,479	11,609	10.8%	23,918	24,511	2.5%	9,397	2.61
Lower Ross	12,217	14,037	14.9%	29,663	31,511	6.2%	7,402	4.26
Richardson Bay	23,404	26,693	14.1%	48,077	51,633	7.4%	11,439	4.51
West Marin	<u>5,434</u>	<u>9,142</u>	<u>68.2%</u>	<u>11,229</u>	<u>19,782</u>	<u>76.2%</u>	<u>258,505</u>	<u>0.08</u>
TOTAL	96,342	119,308	23.8%	223,774	258,947	15.7%	338,198	0.77

Source: Marin County Planning Department, 1990

TABLE 12

## PUBLIC ACQUISITION BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

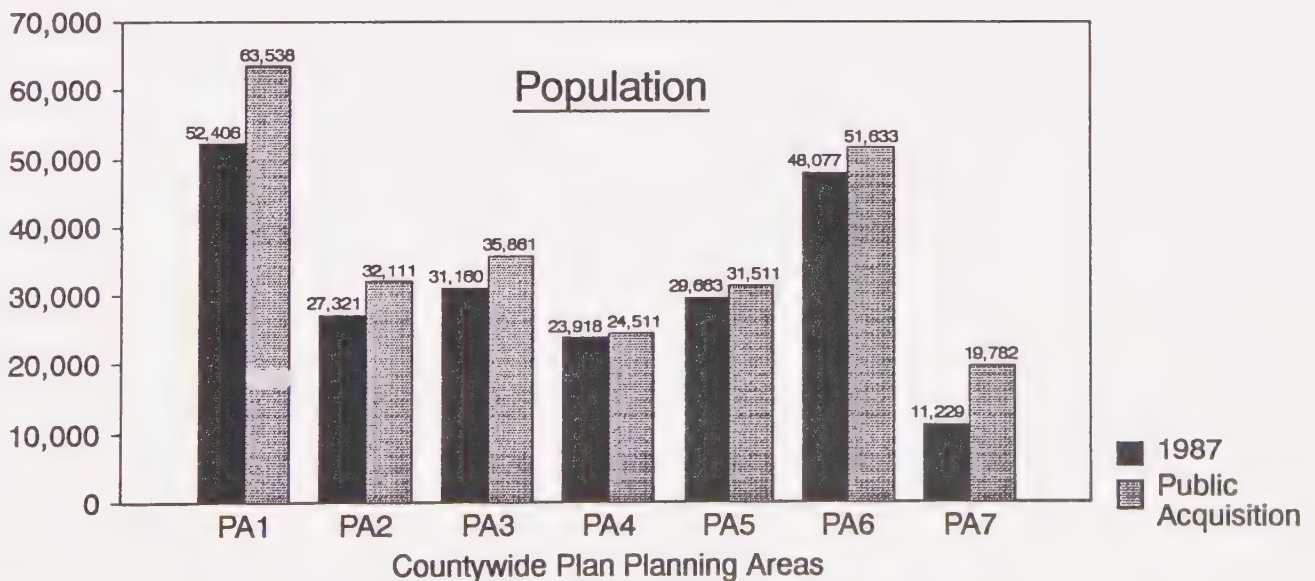
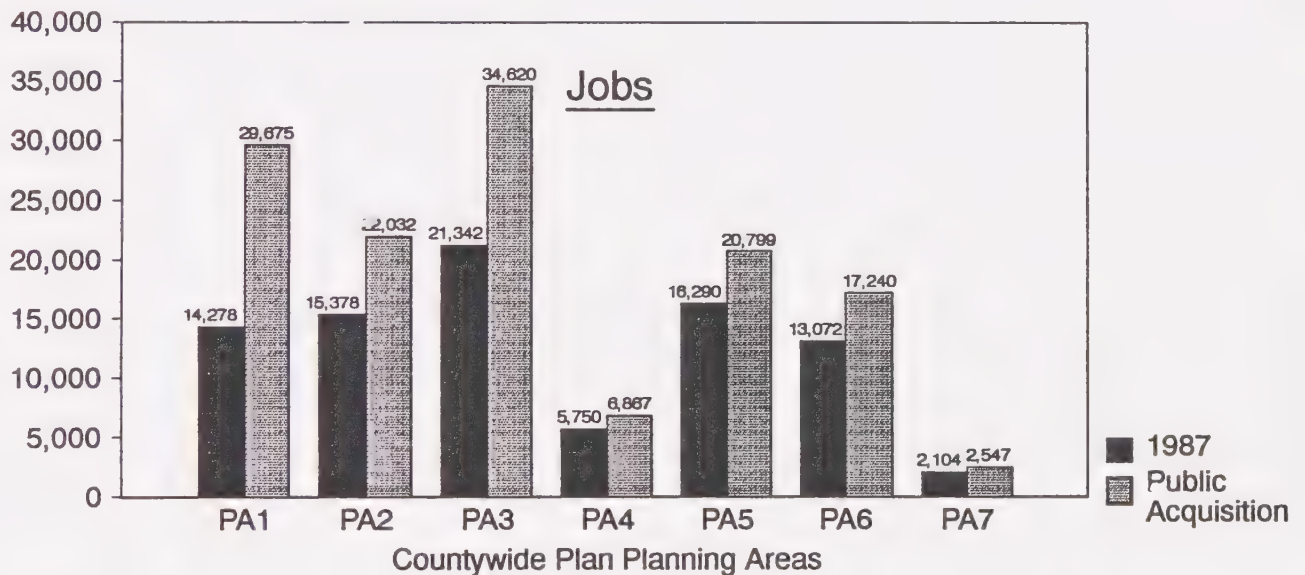
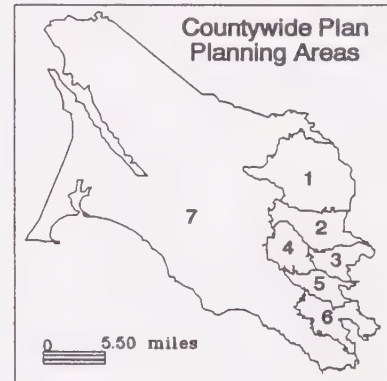
Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	10,098,464	118.6%	14,278	29,675	107.8%	29,889	0.99
Las Gallinas	3,339,297	5,088,504	52.4%	15,378	22,032	43.3%	13,772	1.60
San Rafael	7,673,557	11,873,392	54.7%	21,342	34,620	62.2%	7,794	4.44
Upper Ross	1,300,619	1,623,208	24.8%	5,750	6,867	19.4%	9,397	0.73
Lower Ross	3,538,866	4,803,254	35.7%	16,290	20,799	27.7%	7,402	2.81
Richardson Bay	3,708,568	5,095,044	37.4%	13,072	17,240	31.9%	11,439	1.51
West Marin	<u>758,365</u>	<u>860,224</u>	<u>13.4%</u>	<u>2,104</u>	<u>2,547</u>	<u>21.1%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	39,442,090	58.1%	88,214	133,780	51.7%	338,198	0.40

Source: Marin County Planning Department, 1990



FIGURE 6

# Alternative 5 Public Acquisition







## **ALTERNATIVE 6: REDUCED JOBS**

### **1.6.1 Assumptions**

The Reduced Jobs Alternative would reduce commercial development potential in the Novato and San Rafael Planning Areas by 50%. This alternative is designed to test whether the elimination of future job growth in the northern part of the county would reduce commuting to jobs and preclude the need to expand the transportation system.

### **1.6.2 Location and Extent of Development**

Job reductions are concentrated in the Novato, Las Gallinas Valley, and San Rafael Planning Areas. In Novato, jobs increase 126% from 14,000 to 32,000 jobs. This is a smaller increase than under the Local Policy Alternative where jobs grow by 224% to 46,000. In the Las Gallinas Valley, jobs grow 30% under the Reduced Jobs Alternative from 15,000 to 20,000 jobs as opposed to a 49% increase in jobs under the Local Policy Alternative. In the San Rafael Planning Area jobs grow by 37% instead of 62% under Local Policy, an increase of 1,000 jobs over 1987 conditions.

Housing and population growth are identical to the Local Policy Alternative.









TABLE 13

## REDUCED JOBS BY PLANNING AREA: HOUSING AND POPULATION

Plan Area	1987 Housing Units	Potential Housing Units	Housing Percent Change	1987 Population	Potential Population	Population Percent Change	Land Acres	People Per Acre
Novato	19,481	27,523	41.3%	52,406	68,605	30.9%	29,889	2.30
Las Gallinas	10,640	16,262	52.8%	27,321	36,653	34.2%	13,772	2.66
San Rafael	14,687	18,426	25.5%	31,160	35,862	15.1%	7,794	4.60
Upper Ross	10,479	11,609	10.7%	23,918	24,511	2.5%	9,397	2.61
Lower Ross	12,217	14,037	14.9%	29,663	31,511	6.2%	7,402	4.26
Richardson Bay	23,404	26,693	14.1%	48,077	51,633	7.4%	11,439	4.51
West Marin	<u>5,434</u>	<u>9,142</u>	<u>68.2%</u>	<u>11,229</u>	<u>19,782</u>	<u>76.2%</u>	<u>258,505</u>	<u>0.08</u>
TOTAL	96,342	123,692	28.4%	223,774	268,557	20.0%	338,198	0.79

Source: Marin County Planning Department, 1990

TABLE 14

## REDUCED JOBS BY PLANNING AREA: COMMERCIAL SQUARE FOOTAGE AND JOBS

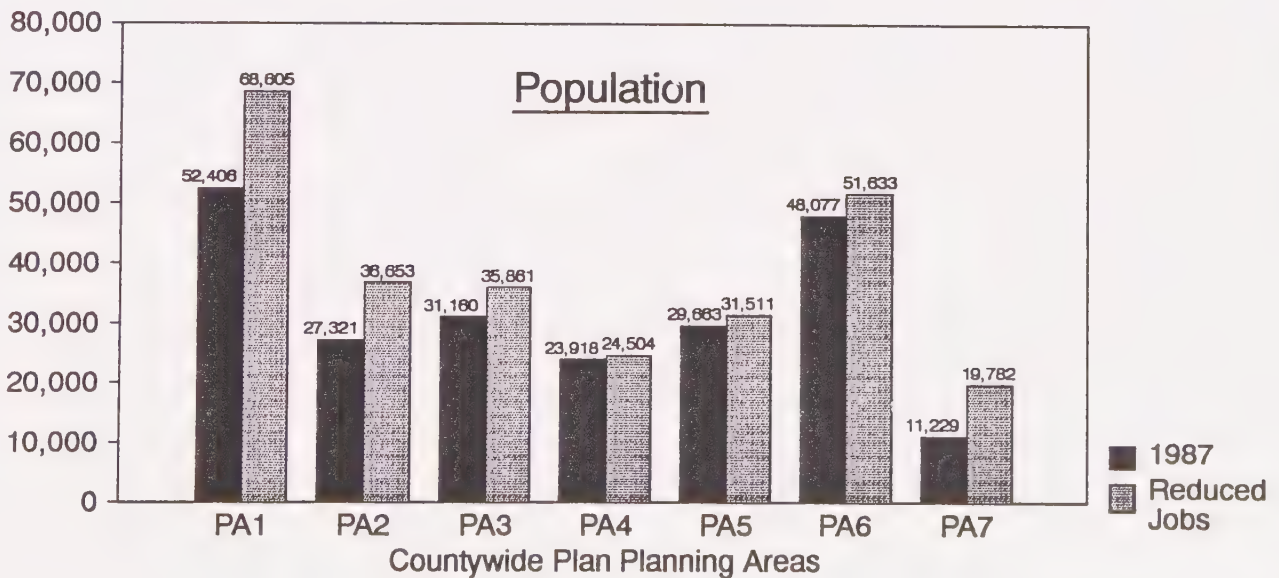
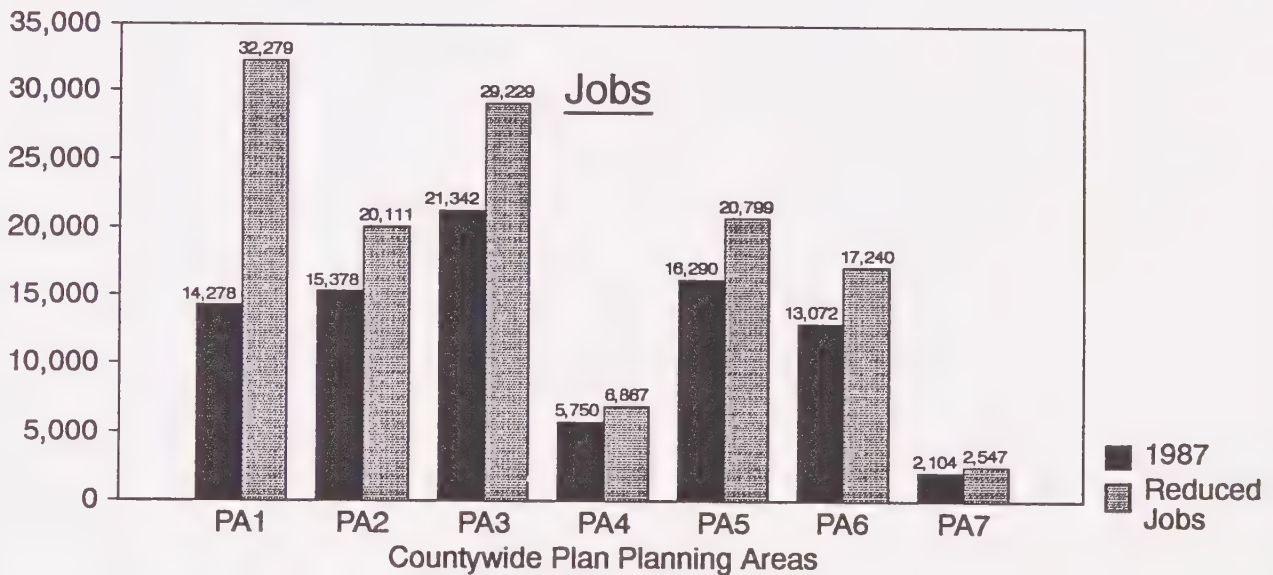
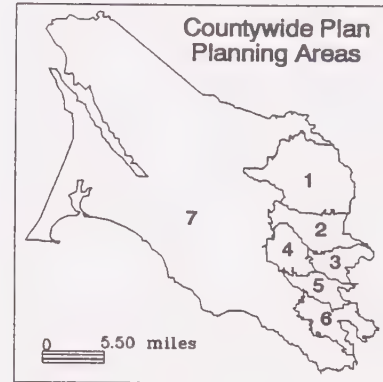
Plan Area	1987 Commercial SQFT	Potential Commercial SQFT	SQFT Percent Change	1987 Jobs	Potential Jobs	Jobs Percent Change	Land Acres	Jobs Per Acre
Novato	4,620,618	10,080,423	118.2%	14,278	32,279	126.1%	29,889	1.08
Las Gallinas	3,339,297	4,870,273	45.8%	15,378	20,111	30.8%	13,772	1.46
San Rafael	7,673,557	10,139,943	32.1%	21,342	29,229	37.0%	7,794	3.75
Upper Ross	1,300,619	1,628,131	25.2%	5,750	6,867	19.4%	9,397	0.73
Lower Ross	3,538,866	4,803,254	35.7%	16,290	20,799	27.7%	7,402	2.81
Richardson Bay	3,708,568	5,095,044	37.4%	13,072	17,240	31.9%	11,439	1.51
West Marin	<u>758,365</u>	<u>860,224</u>	<u>13.4%</u>	<u>2,104</u>	<u>2,547</u>	<u>21.1%</u>	<u>258,505</u>	<u>0.01</u>
TOTAL	24,939,890	37,477,292	50.3%	88,214	129,072	46.3%	338,198	0.58

Source: Marin County Planning Department, 1990



FIGURE 7

# Alternative 6 Reduced Jobs











## APPENDIX 2

### FISCAL IMPACT ANALYSIS

The following sections specifically compare the six land use alternatives in terms of local government costs for property acquisition, services to residential development, services to commercial development, highway and transit improvements, sewer facilities, water supplies and water facilities; and local government revenues from sales taxes, property taxes, utility fees, and other miscellaneous revenue sources.

#### Cost of Local Government Services to Residential Development

The land use alternatives with the most housing and the highest population would incur the highest cost for local government services to residential development for the 20 years from 1990 to 2010.

TABLE 1

#### COST OF LOCAL GOVERNMENT SERVICES TO ALL RESIDENTIAL UNITS

Land Use Alternative	Potential Housing Units 2010	Potential Population 2010	Cost of Local Government Services to all Residential Units, 1990-2010 (1987 Dollars)
Increased Housing	134,235	292,236	\$5,250 million
Local Policy	123,692	268,557	4,988 million
Pedestrian Pocket	123,692	268,557	4,988 million
Reduced Jobs	123,688	268,549	4,988 million
Public Acquisition	119,308	258,947	4,830 million
Constrained Capacity	108,692	237,864	4,620 million

Source: Marin County Planning Department, 1990

#### Cost of Local Government Services to Commercial Development

The land use alternatives with the most commercial development and the highest job totals would incur the highest cost for local government services to commercial development for the 20 years from 1990 to 2010.

TABLE 2

#### COST OF LOCAL GOVERNMENT SERVICES FOR ALL COMMERCIAL LAND USES

Land Use Alternative	Potential Commercial Square Feet 2010	Potential Jobs 2010	Cost of Local Government Services For All Commercial Land Use 1990-2010 (1987 Dollars)
Local Policy	43,971,290	150,520	\$1,166 million
Pedestrian Pocket	43,971,290	150,520	1,166 million
Public Acquisition	39,441,090	133,780	1,092 million
Reduced Jobs	37,477,292	129,072	1,070 million
Capacity Constrained	36,838,757	125,179	1,050 million
Increased Housing	33,096,989	116,063	987 million

Source: Marin County Planning Department, 1990



## Cost of Highway and Transit Improvements

The 101 Corridor Plan recommends \$581 million in transportation improvement in Marin County over the next 20 years including:

\$167 million for Highway 101 widening and interchange improvements

\$273 million for Light Rail transit from Novato to Larkspur

\$3 million for additional bus services

\$59 million for additional ferry services

\$12 million for major arterial streets

\$67 million for repairing, constructing, and maintaining local roads

All six land use alternatives would result in significant job growth in Marin County between 1990 and 2010 ranging from a 41% increase in jobs under the Capacity Constrained Alternative to a 71% increase in jobs under the Local Policy and Pedestrian Pocket alternatives. Each of the land use alternatives would result in population growth ranging from a 6% increase under the Capacity Constrained Alternative to a 31% increase under the Increased Jobs Alternative. In light of the increases in population and jobs expected under all six of the alternatives, the highway and transit improvements recommended in the 101 Corridor Plan would clearly need to be implemented regardless of which land use alternative is implemented between 1990 and 2010.

## Cost of Sewer Facilities

The cost of the new sewer facilities which would be needed to accommodate the 20 years of growth from 1990 to 2010 would range from \$13 million under the Constrained Capacity Alternative to \$24 million with the Local Policy and Pedestrian Pocket alternatives.

TABLE 3

### COST OF NEEDED SEWER FACILITIES

Land Use Alternative	Cost (1987 Dollars)
Constrained Capacity	\$13 million
Public Acquisition	\$19 million
Reduced Jobs	\$19 million
Increased Housing	\$22 million
Local Policy	\$24 million
Pedestrian Pocket	\$24 million

SOURCE: Marin County Planning Department, 1990.



## Cost of New Water Supplies and Facilities

All of the Land Use Alternatives except the Capacity Constrained Alternative would require new water supplies to be purchased and new water facilities to be constructed costing approximately \$60 million over the 20 years from 1990 to 2010.

## Public Acquisition Costs

The Public Acquisition Alternative would include purchasing about 3,000 acres in the areas of North Novato, Hamilton, Bel Marin Keys, Silveira and St. Vincent's for open space. These land purchases would probably cost at least \$75 million in 1987 dollars.

## Sales Tax Revenue

The amount of sales tax revenue generated in Marin County for the 20 years from 1990 to 2010 will be determined primarily by the size of the population residing in the county and the purchasing power of individual consumers. While the distribution of sales tax revenue between the local jurisdictions in the county will depend primarily on the size and location of shopping facilities, the size and location of these facilities will not directly affect the total amount of sales tax revenue generated within the county as a whole.

As the figures in Table 4 indicate, the land use alternatives with the most housing and the highest population would be expected to generate the most sales tax revenue for the county as a whole.

TABLE 4

### SALES TAX GENERATION

Land Use Alternative	Projected Population 2010	Sales Tax Revenue 1990-2010 (1987 Dollars)
Increased Housing	292,236	\$924 million
Local Policy	268,557	890 million
Pedestrian Pockets	268,557	890 million
Reduce Jobs	268,549	890 million
Public Acquisition	258,947	888 million
Capacity Constrained	237,864	840 million

SOURCE: Marin County Planning Department, 1990





## Commercial Property Tax Revenue

The land use alternatives with the most commercial development would generate the most commercial property tax revenue for the 20 years from 1990 to 2010.

TABLE 5

### PROPERTY TAX REVENUE FROM ALL COMMERCIAL PROPERTY

Land Use Alternative	Potential Commercial Square Feet 2010	Property Tax Revenue From all Commercial Property in county 1990-2010 (1987 Dollars)
Local Policy	43,971,290	\$846 million
Pedestrian Pocket	43,971,290	846 million
Public Acquisition	39,442,090	819 million
Reduced Jobs	37,477,292	777 million
Capacity Constrained	36,838,757	756 million
Increased Housing	33,096,989	714 million

SOURCE: Marin County Planning Department, 1990

## Residential Property Tax Revenue, Utility Fees, Miscellaneous Revenues

The land use alternatives with the most housing and the highest population would generate the most revenue from residential property taxes, utility fees, and miscellaneous sources.

TABLE 6

### REVENUE FROM RESIDENTIAL PROPERTY TAXES UTILITY FEES AND MISCELLANEOUS REVENUES

Land Use Alternative	Potential Housing Units 2010	Potential Population 2010	Revenue From Residential Property Taxes, Utility Fees, Misc. Sources (1987 Dollars)
Increased Housing	134,235	292,236	\$4,725 million
Local Policy	123,692	268,557	4,515 million
Pedestrian Pocket	123,692	268,557	4,515 million
Reduced Jobs	123,688	268,549	4,515 million
Public Acquisition	108,692	237,864	4,200 million

SOURCE: Marin County Planning Department, 1990



## APPENDIX 3

### TRANSPORTATION METHODOLOGY

The methodology used to analyze the transportation impacts of the land use alternatives highlights the differences among them based on trip generation. Using 1987 conditions as a reference, trip generation, origin - destination patterns and mode split were calculated via "growth factors". The growth factors are percentage changes between 1987 and buildout under the alternatives.

Trip generation was computed for each Countywide Plan Planning Area using the methodology from the 101 Corridor Study. Trip generation was a function of household income, household size and automobile ownership. Trip attractions were a functions of employment, employment density, and land use. Origin - Destination patterns across the screenlines were assumed to be influenced by the same factors that influence origin - destination patterns today: relative land prices, relationships between wages/salaries and housing prices, and willingness to spend a given amount of time commuting. As with origin - destination patterns, mode split was assumed to be influenced by the same factors that influence mode split today.

Level of Service was calculated from volume to capacity ratios. Transportation system capacity was determined for the proposed transportation improvements in the Marin Sales Tax Expenditure Plan.



# 1987 LAND USE AND TRANSPORTATION SYSTEM

	<i>Person Trips</i>					<i>Vehicle Trips</i>				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	4476	2409	908	287	851	2409	454	87	24	
Pacheco Hill	9875	4702	2309	664	2187	4702	1154	201	62	
Puerto Suello Hill	9965	4498	2402	680	2422	4498	1201	206	69	
Cal Park Hill	10136	4096	2213	841	2928	4096	1107	255	84	
Alto Hill	10863	4082	2406	992	3344	4082	1203	301	91	
Golden Gate Bridge	13331	3998	2705	1148	5435	3998	1352	348	116	

## ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	2863	111	0.72	0.06	C	A
Pacheco Hill	5856	264	0.84	0.13	D	A
Puerto Suello Hill	5699	275	0.63	0.14	B	A
Cal Park Hill	5202	338	0.74	0.17	C	A
Alto Hill	5285	391	0.75	0.20	C	A
Golden Gate Bridge	5350	464	0.77	Note 1	C	Note 1

## ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	2409	565	2974	0.60	0.28	0.50	B	A	A
Pacheco Hill	4702	1418	6120	0.67	0.71	0.68	B	C	B
Puerto Suello Hill	4498	1476	5974	0.56	0.74	0.60	A	C	A
Cal Park Hill	4096	1445	5541	0.59	0.72	0.62	A	C	B
Alto Hill	4082	1594	5676	0.58	0.80	0.63	A	C	B
Golden Gate Bridge	3998	1817	5814			0.77			C





**LOCAL POLICY ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM**

	Person Trips					Vehicle Trips				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	6810	3665	1382	436	1294	3665	691	132	37	
Pacheco Hill	13984	6659	3270	940	3097	6659	1635	285	88	
Puerto Suello Hill	12993	5864	3132	887	3158	5864	1566	269	90	
Cal Park Hill	12263	4955	2678	1017	3542	4955	1339	308	101	
Alto Hill	12322	4630	2729	1126	3793	4630	1364	341	103	
Golden Gate Bridge	14878	4462	3019	1281	6065	4462	1509	388	130	

**ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS**  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4356	169	1.09	0.08	F	A
Pacheco Hill	8293	373	1.18	0.19	F	A
With McInnis Pkwy			1.07		F	
Puerto Suello Hill	7430	359	0.93	0.18	E	A
Cal Park Hill	6294	409	0.90	0.20	D	A
Alto Hill	5995	444	0.86	0.22	D	A
Golden Gate Bridge	5971	518	0.85	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3665	860	4525	0.92	0.43	0.75	E	A	C
Pacheco Hill	6659	2008	8667	0.95	1.00	0.96	E	F	E
With McInnis Pkwy				0.84			D		
Puerto Suello Hill	5864	1925	7789	0.73	0.96	0.71	C	E	C
Cal Park Hill	4955	1748	6703	0.71	0.87	0.74	C	D	C
Alto Hill	4630	1808	6439	0.66	0.90	0.72	B	E	C
Golden Gate Bridge	4462	2028	6489			0.85			D



**CONSTRAINED CAPACITY ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM**

	Total	<i>Person Trips</i>				<i>Vehicle Trips</i>			
		1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit
Sonoma Co. Line	6532	3516	1325	418	1242	3516	663	127	35
Pacheco Hill	12401	5905	2900	833	2746	5905	1450	253	78
Puerto Suello Hill	11063	4993	2666	755	2689	4993	1333	229	77
Cal Park Hill	11085	4479	2420	919	3202	4479	1210	279	91
Alto Hill	11545	4338	2557	1055	3554	4338	1278	320	96
Golden Gate Bridge	14419	4324	2926	1242	5878	4324	1463	376	126

**ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS**  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4178	162	1.04	0.08	F	A
Pacheco Hill	7355	331	1.05	0.17	F	A
With McInnis Pkwy			0.94		E	
Puerto Suello Hill	6327	306	0.79	0.15	C	A
Cal Park Hill	5689	370	0.81	0.19	D	A
Alto Hill	5616	416	0.80	0.21	D	A
Golden Gate Bridge	5787	502	0.83	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3516	825	4341	0.88	0.41	0.72	D	A	C
Pacheco Hill	5905	1781	7686	0.84	0.89	0.85	D	D	D
With McInnis Pkwy				0.73			C		
Puerto Suello Hill	4993	1639	6632	0.62	0.82	0.60	B	D	B
Cal Park Hill	4479	1580	6059	0.64	0.79	0.67	B	C	B
Alto Hill	4338	1694	6032	0.62	0.85	0.67	B	D	B
Golden Gate Bridge	4324	1965	6289			0.83			D



**INCREASED HOUSING ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM**

	Person Trips					Vehicle Trips				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	6730	3622	1366	431	1279	3622	683	131	37	
Pacheco Hill	13915	6625	3253	935	3081	6625	1627	283	88	
Puerto Suello Hill	12673	5720	3054	865	3080	5720	1527	262	88	
Cal Park Hill	12050	4869	2631	1000	3481	4869	1316	303	99	
Alto Hill	12304	4623	2725	1124	3787	4623	1362	341	103	
Golden Gate Bridge	14847	4452	3013	1278	6053	4452	1506	387	130	

**ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS**  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4305	167	1.08	0.08	F	A
Pacheco Hill	8252	371	1.18	0.19	F	A
With McInnis Pkwy			1.06		F	
Puerto Suello Hill	7247	350	0.91	0.18	E	A
Cal Park Hill	6185	402	0.88	0.20	D	A
Alto Hill	5986	443	0.86	0.22	D	A
Golden Gate Bridge	5958	517	0.85	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3622	850	4472	0.91	0.43	0.75	E	A	C
Pacheco Hill	6625	1998	8623	0.95	1.00	0.96	E	E	E
With McInnis Pkwy				0.83			D		
Puerto Suello Hill	5720	1877	7597	0.71	0.94	0.69	C	E	B
Cal Park Hill	4869	1718	6587	0.70	0.86	0.73	B	D	C
Alto Hill	4623	1806	6429	0.66	0.90	0.71	B	E	C
Golden Gate Bridge	4452	2023	6476			0.85			D





**PEDESTRIAN POCKET ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM**

	<i>Person Trips</i>					<i>Vehicle Trips</i>				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	6522	3510	1323	418	1240	3510	662	127	35	
Pacheco Hill	13540	6447	3166	910	2998	6447	1583	276	86	
Puerto Suello Hill	12942	5841	3119	883	3146	5841	1560	268	90	
Cal Park Hill	12274	4959	2680	1018	3545	4959	1340	309	101	
Alto Hill	12332	4634	2731	1127	3796	4634	1365	341	103	
Golden Gate Bridge	14889	4465	3021	1282	6070	4465	1511	388	130	

**ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS**  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4172	162	1.04	0.08	F	A
Pacheco Hill	8030	361	1.15	0.18	F	A
With McInnis Pkwy			1.03		F	
Puerto Suello Hill	7401	358	0.93	0.18	E	A
Cal Park Hill	6299	410	0.90	0.20	D	A
Alto Hill	5999	444	0.86	0.22	D	A
Golden Gate Bridge	5975	519	0.85	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3510	824	4334	0.88	0.41	0.72	D	A	C
Pacheco Hill	6447	1944	8391	0.92	0.97	0.93	E	E	E
With McInnis Pkwy				0.81			D		
Puerto Suello Hill	5841	1917	7759	0.73	0.96	0.71	C	E	C
Cal Park Hill	4959	1750	6709	0.71	0.87	0.75	C	D	C
Alto Hill	4634	1810	6444	0.66	0.90	0.72	B	E	C
Golden Gate Bridge	4465	2029	6494			0.85			D



PUBLIC ACQUISITION ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM

	Person Trips					Vehicle Trips				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	6384	3436	1295	409	1213	3436	648	124	35	
Pacheco Hill	12815	6102	2996	861	2838	6102	1498	261	81	
Puerto Suello Hill	12563	5671	3028	857	3054	5671	1514	260	87	
Cal Park Hill	12261	4954	2677	1017	3542	4954	1339	308	101	
Alto Hill	12320	4629	2728	1125	3792	4629	1364	341	103	
Golden Gate Bridge	14876	4461	3018	1281	6064	4461	1509	388	130	

ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4083	159	1.02	0.08	F	A
Pacheco Hill	7600	342	1.09	0.17	F	A
Puerto Suello Hill	7185	347	0.90	0.17	D	A
Cal Park Hill	6293	409	0.90	0.20	D	A
Alto Hill	5994	444	0.86	0.22	D	A
Golden Gate Bridge	5970	518	0.85	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3436	806	4242	0.86	0.40	0.71	D	A	C
Pacheco Hill	6102	1840	7942	0.87	0.92	0.88	D	E	D
Puerto Suello Hill	5671	1861	7532	0.71	0.93	0.68	C	E	B
Cal Park Hill	4954	1748	6702	0.71	0.87	0.74	C	D	C
Alto Hill	4629	1808	6438	0.66	0.90	0.72	B	E	C
Golden Gate Bridge	4461	2027	6488			0.85			D



**REDUCED JOBS ALTERNATIVE  
PROPOSED TRANSPORTATION SYSTEM**

	<i>Person Trips</i>					<i>Vehicle Trips</i>				
	Total	1 Occup	2 Occup	3+Occup	Transit	1 Occup	2 Occup	3+Occup	Transit	
Sonoma Co. Line	6545	3523	1328	419	1244	3523	664	127	36	
Pacheco Hill	13509	6432	3159	908	2991	6432	1579	275	85	
Puerto Suello Hill	12408	5601	2991	847	3016	5601	1495	257	86	
Cal Park Hill	11907	4811	2600	988	3439	4811	1300	299	98	
Alto Hill	12326	4631	2729	1126	3794	4631	1365	341	103	
Golden Gate Bridge	14881	4463	3020	1281	6067	4463	1510	388	130	

**ASSIGNMENT OF VEHICLES TO LANES, VOLUME TO CAPACITY AND LOS CALCULATIONS**  
HOV Lanes for Vehicles With 3 or More Passengers

	<i>Total Vehicles</i>		<i>Volume to Capacity</i>		<i>Level of Service</i>	
	Mixed Flow	HOV	Mixed Flow	HOV	Mixed Flow	HOV
Sonoma Co. Line	4187	163	1.05	0.08	F	A
Pacheco Hill	8012	361	1.14	0.18	F	A
With McInnis Pkwy			1.03		F	
Puerto Suello Hill	7096	343	0.89	0.17	D	A
Cal Park Hill	6111	398	0.87	0.20	D	A
Alto Hill	5996	444	0.86	0.22	D	A
Golden Gate Bridge	5972	518	0.85	Note 1	D	Note 1

HOV Lanes for Vehicles With 2 or More Passengers

	<i>Total Vehicles</i>			<i>Volume to Capacity</i>			<i>Level of Service</i>		
	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes	Mixed Flow	HOV	All Lanes
Sonoma Co. Line	3523	827	4349	0.88	0.41	0.72	D	A	C
Pacheco Hill	6432	1940	8372	0.92	0.97	0.93	E	E	E
With McInnis Pkwy				0.80			D		
Puerto Suello Hill	5601	1838	7439	0.70	0.92	0.68	C	E	B
Cal Park Hill	4811	1698	6509	0.69	0.85	0.72	B	D	C
Alto Hill	4631	1809	6440	0.66	0.90	0.72	B	E	C
Golden Gate Bridge	4463	2028	6491			0.85			D







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